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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Reports in Operative Surgery.* By RICHARD G. H. BUTCHER, ESQ., M. R. I. A., F. R. C. S. I.; Chairman of the Surgical Court of Examiners, and Examiner on Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery.

ON AMPUTATION AT THE KNEE-JOINT—AT THE KNEE—AND EXCISION OF THE KNEE-JOINT.

THE fatality attendant upon amputation of the thigh for years back has awakened a spirit of emulation amongst practical surgeons towards perfecting a better method. The circular, the oval, the various modifications of flap, have each been in vogue, vaunted, and praised, according to the ability and power of the originator, special methods becoming attractive, and adhered to for a time, in proportion to the mental capacity and operative dexterity of the surgeon,—the very abandonment of considerately weighed opinion going far to establish the truth, in which all agree, that amputation of the thigh is perilous in the extreme, stern hospital experience registering the fact, of how long and weary is sometimes the convalescence, the healing of the stump, and how often, too, the completion of the latter the source of much misery and pain.

To many of those dangers consequent upon division of the compact tissue of the bone, pathology has pointed, and by the untiring investigations of Cruveilhier and others, they have been elicited and brought to light. Every museum affords abundant evidence, by irregularly shaped exfoliations, how readily the compact structure of bone perishes after the application of the saw, its periosteum being cut through and ruffled on the outside, sometimes even rudely, and its delicate vascular lining membrane in all instances lacerated and torn within. To no bone in the body do these observations apply with greater force than to the thigh-bone: its compact tissue is thicker, more dense than any other; and, above all, its medullary canal and lining membrane are more developed and extensive. Is it to be wondered at, then, that inflammation aroused in this vascular network should often terminate in suppurative crisis; nay more, in phlebitic complications and death? Professor Syme goes so far as to say: "I believe the thigh-bone would be more fruitful of such exfoliation, if amputation through it were not so fatal;" and then he pronounces the fatality in these words: "The average frequency of deaths is not less than from 50 to 70 per cent., while it cannot be denied that many of the survivors suffer from uneasiness connected with protrusion of the bone." In a paper published by this surgeon in the Edinburgh Monthly Journal, May, 1845, he considers these several points in relation to the fatality of amputation of the thigh, and concludes that the point "radically wrong in the principle of the operation is dividing the thigh-bone through its shaft, instead of the condyles or trochanters." The spirit of conservative surgery is abroad throughout the land; and to its powerful influence must be ascribed the restitution of those several operations about the knee, and in reference to which I wish to speak,—amputation at the *knee-joint*—amputation at the *knee*—excision of the *knee-joint.*

Amputation at the knee-joint, though bearing its date years and years ago, was performed by Hoin, and with good results, so far back as 1764, and after him by several continental surgeons, with varying success. Velpeau, in particular, has distinguished himself in reference to it, having frequently performed it with success. In America, too, the operation has found great favour: in an interesting paper by Dr. Markoe of New York, published in the New York Journal of Medicine, we learn that he has advocated this operation in preference to amputation of the thigh since 1841. He writes, that in this operation the bone is uninjured, while in the other (the operation through the shaft) it is divided with a degree of violence, the effects of

which are not always appreciated. "The effects of this violence both upon the bone and its envelopes, and of the exposure of the cavity of the medullary membrane to the action of air and pus, are seen in several of the accidents which occur after amputation, some of which are merely of sufficient gravity to annoy the patient and prolong the period of his cure, while others are of such danger and severity as materially to endanger life." The exfoliation of the injured bone and the formation of tubular sequestra, the author regards as due to the division of the nutritious arteries of the bone either by the saw or the catlin; the supply of blood to the medullary membrane, thus cut off, is too slowly supplied by anastomosis, and the bone dies. For the purpose of ascertaining the usual point of entrance of the nutritious artery into the bone, Dr. Markoe examined 45 femora; in 23, the foramen was placed at about the junction of the middle and upper third; and in 22, at or near the centre of the bone: in several it was double. Dr. Markoe remarks, phlebitis, "another destructive consequence of such violence, is of much rarer occurrence in the well-regulated hospitals of the United States, than in Europe." From Jaeger's collection of the published cases of amputation at the knee-joint, it appears that, out of thirty-seven, about twenty-two have had a favourable, and fourteen an unfavourable result[a].

At the Western Medical Society of London, October 23, 1857[b], Mr. Lane gives the particulars of the case of a child, aged 8, where he performed amputation at the knee-joint, and I believe he is the first surgeon who in England thus operated, leaving the articular surfaces entire. Since then this special operation has been frequently and successfully practised.

We come now to consider the question of *amputation at the knee.* The steps of the operation are similar to that at the knee-joint, save that the articular surfaces of the femur are removed. To Professor Syme, of Edinburgh, is certainly due the credit of first practising this operation, and placing it in a prominent position by his writings, as already referred to; the point, however, of originality in the matter, must be conceded to Malgaigne, for he first suggested it: "If through disease of the knee, you could not have recourse to disarticulation" (writes this practical surgeon), "perhaps you would obtain a similar result by cutting the thigh as near as possible to the condyles, and covering the osseous surface with a large anterior flap. This very simple idea is in accordance with the most useful rule of amputations, viz., to operate as far as possible from the

[a] South's Chelius, vol. ii. p. 943.

[b] See Lancet.

trunk. I can scarcely understand how it has escaped the observation of surgeons to the present day"[a]. I believe Mr. Fergusson to have been the first surgeon who performed this operation in England. It was on the 17th of May, 1845, and the patient was a man aged 24 years; the particulars of the case will be found published in the Lancet, July 19, of that year.

It is most interesting that in the last edition of his Practical Surgery, 1857, he alludes to this case, operated on years before, in these satisfactory terms:—"I have seen this young man repeatedly since, and he was at King's College Hospital a few weeks ago. Without exception, I deem the stump equal to any I have ever made in the thigh. He has repeatedly walked forty miles a day, with a very indifferently made artificial leg, and once accomplished 120 miles in three days, without the slightest damage to the tissues." Since this time Mr. Fergusson and other surgeons have frequently repeated the operation, and with excellent success. I shall now detail the case in which I recently performed this operation, and dwell upon the reasons which made me select it as being peculiarly applicable.

Thomas Kelly, a car-driver, aged 45 years, a scorbutic, broken-down-looking man, admitted to Mercer's Hospital, August 24, 1859. He had suffered for seven years previous to this time with a large, angry ulcer, fully the size of the hand, and occupying more than the middle third of the left leg, on its anterior and lateral boundaries. A more quickly destructive process was set up in its position about a year before, and which he attributed to the effects of intense heat, which occurred in this way. The man was employed at his calling, and exposed to severe wet and cold for several hours. He came home with his limbs benumbed, and sat at a large fire to dry himself, when he fell asleep; on being wakened, it was found that his right leg, the one nearest to the fire, was burned severely, particularly about its centre and fore part; the ulcerated limb suffered likewise, but not to the same degree. Since this accident the ulcer grew gradually deeper, at length seizing on the tibia, and eating steadily and gradually its exposed surface; the consequences of the burn on the sound limb were sufficient of themselves to entail confinement for nearly three months, at the expiration of which time the destroyed surface was cicatrized. During this period the ulcerative process was going on deeper and deeper, wider and more extensive in the bone, until the morning previous to the above date, when, in

[a] Manual of Operative Surgery, by Malgaigne, translated by Brittan, p. 258.

making an effort to get up and walk, the limb gave way, the rotten bone having broken across; he was then brought to hospital, and on the date above specified. The limb at this time presented a shocking appearance: the leg was hollowed out in the extensive way mentioned, while the sharp, broken spiculæ of the fragments projected in the centre; two considerable pieces were extracted as being already dead and partly detached; the whole was chambered into recesses holding sordid pus, and recent imperfectly formed coagula; the bleeding, I may remark, was neither rapid nor with force; on the contrary, it was quite under control.

A very remarkable feature in this serious case was the total absence of shock. The man suffered from none of those frightful nervous symptoms of convulsed system which so grievously threaten life when compound fracture is produced in a healthy limb, and under ordinary circumstances. No; he gave the history of his case calmly and quietly; there was no perceptible instability of his pulse, or alienation of his mental powers. In other words, his condition was scarcely altered from the enfeebled state to which he had attained before the complication; while the presumptive evidence certainly would have been, that so much additional violence would lead to the extinction of life; but the important practical lesson has been taught otherwise. All things considered, it was desirable that an effort should be made to save the limb: it was put up in a fracture-box, such as I have described when writing of fractures in the vicinity of the ankle-joint[a]. Every requirement essential towards removing muscular action, and maintaining the bones in favourable position, were afforded by this apparatus,—the thigh being slightly bent upon the pelvis, sufficient in degree towards relaxing the muscles of the calf, while the leg lay supported on a horizontal plane; side splints ran into the box, and foot supports, steadying the part effectively, at the same time leaving exposed the broken surface for whatever applications might be considered requisite. Constitutional and local treatment was steadily persevered in for several months, and at one time a hope was entertained that the injured bone might crumble away; and being, according to circumstances, assisted by the gouge and forceps, art did everything to keep the part at rest, to assist a more vital action, a more reparative process by suitable dressings, while all constitutional treatment

[a] See Dublin Quarterly Journal of Medical Science, February, 1852, and continued in the May Number of the same year.

tended towards improving the character of the blood so as to afford more energetic and life-giving properties to mend the part. Nature certainly made the effort at repair,—she improved the condition of the soft parts, she condensed the structures around the broken bone, she effused lymph in its locality, she consolidated it even to that extent that scarcely any motion was permitted at the primitive solution of continuity; but here she stopped, as if incapable of bearing up against so prolonged a struggle. New bone was never formed. Thus exhausted, quickly a more unfavourable condition of parts was steadily produced; months passed on; a consuming fever was evoked. Amputation was proposed on several occasions, as offering a reasonable chance of life, but the man would not assent to the measure. Striking and more apparent every day were the withering marks of hectic stamped upon him. During all this time the local changes passed on from bad to worse,—the large ulcerated gap put on a most malignant aspect; out of it on all sides sprouted firm irregular nodulated masses, characterized by deep and lancinating pain, continuing day and night. Yet neither its secretion nor its structure, examined by the microscope, would confirm such a change being wrought in the part. The odour and fetid discharge were most oppressive and abundant, and really life seemed perilled by the absorption of its poison.

At length the man consented, the last week in February, to have the limb removed, and I determined, for the following reasons, to amputate at the knee.

If the case was one after recent accident, where the integuments were torn and lacerated and killed, and the bones crushed and broken to the same extent as happened in this case by the ravages of unhealthy ulceration, I would not hesitate about making the effort to save the knee-joint, and I would have amputated a little below the tubercle of the tibia. No one will for a moment deny the advantages of saving the knee when practicable; but here I was afraid to attempt any such measure, lest phlebitic inflammation should be set up in the cancellated texture of the diseased bone after its section was completed, and, moreover, I found that already its delicately arranged structure was implicated and spoiled, the integuments over the part being somewhat tender and œdematous. The after examination of the limb, on removal from the body, showed clearly how accurate was this reasoning, for the part of the tibia intervening between the breach in the soft parts and the knee-joint was altogether infiltrated with pus and bloody

serum. There can be no difficulty in surmising what the result of the operation, under such circumstances, would have turned out.

I shall illustrate, by the following case, how different should be the practice after recent injury, and when the bones are healthy.

James M'Cabe, a railway guard, aged 30, was admitted to Mercer's Hospital, at 12 o'clock, P. M., October 28th. As the carriages were coming quickly into the station he endeavoured to cross the line; he lost his presence of mind, remained too long, and then threw himself down, but his right foot and leg lay obliquely along the rail, several of the carriages passed over them, crushing open the ankle-joint, smashing up the foot, breaking into fragments the tibia and fibula beyond their middle thirds, and tearing away the flesh from the fore part and sides of the bones, even somewhat higher up in front; while, in the centre and about the foot, bones, muscles, and tendons were all bruised into shapeless masses. The accident occurred only a few hundred yards from the hospital, and he was brought down in a few minutes. I was sent for and saw him at once. When I came, it was thought he was dead. The collapse was extreme; he had only a feeble wave in the pulse at the wrist; he was cold as death, and clammy sweat pouring out from his forehead and body. The only evidence of life he gave was in maniacal raving. There was no bleeding from the mangled extremity. The most powerful means were put in practice to resuscitate the man. Ammonia constantly applied to the nose, and frictions with it; over the back and extremities heated jars; hot brandy and water enemata, and, as he could not swallow, I slipped a long tube into his stomach, and injected nearly a tumbler of the same fluid. After some time, in about an hour, he began to show signs of life: the pulse to get up; the heart to beat more forcibly; heat to be generated. I now steadied the limb upon a wide splint placed behind, and a few temporary turns of a roller to prevent it being further damaged, now that he was beginning to have returning consciousness, and to experience pain. After about two hours steadily persevering in this way, he was able to speak rationally, and the raving began to subside; the circulation was gently getting up, and now some oozing began from the lacerated parts: the blood soon came quicker, and of a scarlet colour. I placed a pad upon the splint, corresponding to the popliteal artery, so that, when the limb was let down, it made pressure on the vessel; no circular compression being applicable; this for a time controlled the bleeding, but soon it ap-

peared again from several pits or depressions in the broken up parts. Small shreds of lint, steeped in turpentine, and passed in for a few moments exerted some influence, but soon the welling-up would commence in another part. At this time I got an assistant to make pressure on the femoral artery at the groin, while I supported the entire crushed and now quivering mass with a bandage. The compressor used in aneurism I now adjusted so as to take the place of the assistant's hand; and having got the pad well over the artery, just below the pubis, the bleeding seemed quite under control. His cries of pain and agony were becoming now so great, that I gave him a full opiate.

At half-past 3 o'clock, some slight return of the bleeding; the man becoming more conscious, and circulation becoming more developed. At half-past 4 I was again summoned to see him, as the bleeding came on so rapidly that the resident pupil was obliged to place an ordinary tourniquet upon the thigh, which controlled the flow.

Reaction was now fully established, and I determined to remove the limb. So imperative did I consider the measure that I did not conceive it right to wait till morning, but decided on operation at once, by candle-light. The man being now well alive, I made a more minute investigation as to the condition of the shattered upper fragment, so as to regulate my proceedings, I found the bone materially injured to within two inches of the articulation; the ragged flaps into which the integuments were torn in front facilitated this examination. So I determined on saving the joint. The patient, while yet in his bed, was placed under the influence of chloroform, and then gently, and in the recumbent position, lifted and placed upon a table close beside his bed. This was removed a few yards towards the end of the ward, so as to secure the light of two movable lamps constructed for such purposes. I next removed the tourniquet, pressure on the femoral artery at the groin being substituted. Standing on the right side of the patient I laid the heel of a long narrow-bladed knife on the inner edge of the tibia, not more than two inches from the articular surface of the bone, and then brought the knife nearly straight across through the soft parts, as far as the outer edge of the fibula, their injured state not admitting of a more curved sweep. Without lifting the knife, its point entered at the outer angle of the wound, just behind the fibula; the edge of the knife was turned downwards, and transfixion of the calf accomplished close to the posterior surface of the bones; the knife was carried downwards, holding this relation, for about two inches, and then its

edge was turned somewhat outwards, and carried thus down for about an inch, and then with an undulating sweep to the end of the flap, which was fully preserved eight inches long. The first of these manœuvres was executed with the object of making direct section of the artery, and thus avoiding "slicing it;" the second hollowing out the flap, the calf being very large and muscular, so as to permit it to double up nicely, and *without constriction*, a cause which I believe tends frequently to non-union, the flap being deprived of a vigorous supply. The outer flap was freed upwards about a quarter of an inch, and the knife was then swept round the bones, dividing every adherent fibre, and cutting evenly the periosteum. The fine narrow blade of my own saw was then passed as high as the first flap would permit, and the tibia cut at first in a gentle curve, and then directly backwards. together with the fibula. The arteries were next secured, and the flap turned up, which seemed a little over abundant, but it was cut with such an intention, and after a few days showed its just proportions, and was everything that could be desired. The patient was then carried back to his bed, the limb supported on an inclined plane of pillows, and the flap spread out gently yet sustained in a curve, and the part left exposed to glaze.

In a few moments the man became conscious, the chloroform acting most admirably. It is true, that only a few moments elapsed from the time of his being taken from his bed and again placed back in it. But a severe capital operation had been performed, and the creature was quite unconscious of its having been done. And, above all things, *he sustained no shock.* After this I stood beside the man for half an hour, gave him some wine with opium, and he fell into a tranquil sleep. In three hours he awoke, quite conscious, and free from pain. At half-past 1 o'clock P.M. I dressed the stump, removing any little clots with great gentleness. The method I adopted in sustaining the part evidently permitted the large flap to curve readily without pain or spasm. I now placed several points of the interrupted suture, and brought the parts in the intervals accurately into position.

It is unnecessary to follow up the daily reports: the ligatures came away in due time, and the entire flap united nearly by first intention; the stump was worthy of my highest approbation. In six weeks the man was walking upon an artificial leg; and since that period to the present, many, many months, he has been uninterruptedly employed as a guard upon the railway[a].

[a] The judgment of the surgeon, in all these cases, will be called upon to determine

For the reasons already assigned, then, I did not consider it advisable to amputate, in Kelly's case, through the cancellated structure of the tibia, and I performed the operation through the lower end of the femur, after the following manner:—

February 25, 1860. The man being carried into the operating theatre, he was quickly brought under the influence of chloroform; when so, he was drawn down gently to the edge of the operating table, so that his pelvis rested thereon. The right leg was then secured to the leg of the table, so as to guard against any struggles, and permit me free access to the affected limb. The femoral artery was compressed at the groin by an assistant, and the leg steadily supported by another; standing on the right side of the patient, I drew a long, narrow-bladed amputating knife in a curve way across the forepart of the articulation, the heel of the knife being laid on the outer and back surface of the external condyle, at where I thought its cartilage ceased; it was then carried downwards and outwards across the lower margin of the patella, and corresponding to the insertion of its ligament, and then upwards to the internal condyle, at a point opposite to that where the knife was first placed; the flap was then raised off the patella by a few touches of the point of the knife, and then came directly back at its upper edge, severing the rectus and muscles attached to it, and freely opening the joint in front. So well back were the angles of the wound, and so accurately placed, that transfixion was accomplished with facility, the flat of the knife lying evenly against the bone, as it travelled from within outwards; the leg was then very slightly bent, so as to permit the instrument to slide more readily over the posterior projection of the internal condyle; having passed this point, the leg was again straightened, and the knife kept close to the bones throughout the entire extent of the calf, and then made to cut directly out; the anterior flap was next freed from its synovial lining, and lifted from the sides of the condyles, and in front, just free from the margin of the cartilage of incrustation. The flaps being well held up before and behind, and the limb carefully steadied, I laid the fine blade of my own saw on the healthy osseous tissue close to the

accurately what ought to be done. A few days since a man was admitted into Mercer's Hospital, run down by long-continued disease, incurable, of his ankle-joint and tarsus. The tibia was diseased several inches above the joint, wide, expanded, and with marks of cicatrices over it, where deadened portions of bone had been extruded; so likewise the middle of its shaft was implicated. On the 6th of the present month (September) I amputated by double flap, less than a hand's-breadth below the knee; curved the bone well in the section, held the flaps well together with iron-wire suture, and in a few days the entire, save in the track of the ligatures, was healed by first intention.

cartilage, but not infringing upon it, and then cut the bone in a curved manner from before backwards, thus securing even a longer stump, more of the bone free of cartilage, and exempt from sharp and irritating edges, better in every way for adaptation to the soft parts. *I was the first, I believe, to lay stress upon this method of sawing the bones in certain amputations*[a]*;* thus the limb was severed; the arteries were then secured—seven in all—and the patient conveyed back to bed; he quickly awoke from the effects of the chloroform, which acted most favourably, the patient not having experienced any pain; he bore the operation well, not having lost, I think, a drachm of arterial blood; the flaps were dealt with, and left to glaze, as in the case just recited; in seven hours I dressed the wound, and it was astonishing how admirably the parts came together; at first it might have been supposed that too much soft parts had been kept, but this proved not to be the case; it will be seen that the same complicated way of forming the posterior flap, as described in the *recent amputation*, was not followed out or necessary here; here the calf was wasted, attenuated from want of exercise, from general emaciation; and here, too, the lower end of the flap was cut straight out, so that, when doubled up, the additional muscular tissue preserved was beautifully covered in by the thin anterior flap; all the surfaces were gently freed from clots; all the surfaces were accurately brought together; the ligatures chiefly being at the posterior angles; several points of the interrupted suture were had recourse to, and some wide straps of adhesive plaster, extending from high up behind the thigh, carried over the face of the stump, and up upon the forepart of the limb, so as to afford a long, gentle traction forwards; the line of juncture secured well in front, and altogether the covering in of the bone was abundant and admirable; pillows were adjusted also to favour this end.

On the 26th, the day after the operation, the pulse had come down from 125 to 100; and in every way the man was greatly benefited by the operation; so quickly did everything go on, so little pain, so free from discharge, that I only removed one or two of the plasters near where the ligatures lay; so little redness or resentment to the presence of the stitches, that I suffered them to remain until the 8th of March, when I cut them all out, union being effected by first intention throughout the whole track of the wound, and the entire flap well up and fixed in its berth; great caution was employed in

[a] See a paper on Amputation, in the Dublin Quarterly Journal of Medical Science, August, 1851.

giving it due support, both by adhesive straps and pillows nicely arranged.

On the 13th of March the smaller ligatures came away, and on the 16th the main ligatures (two in number) came away without a trace of blood; this was at 9 A. M.; however, I was sent for at 6 P. M., as bleeding was reported to have come on; the dressings were all stained with scarlet blood, and a few drops occasionally escaped from beneath and through them; on exposing the inner angle, the blood came up quickly from the track through which the ligature was drawn in the morning; I elevated the stump nearly at right angles with the trunk; put a few evenly adjusted compresses over the face of the stump, and made more forcible pressure upon it by wide adhesive straps brought from behind forwards, and then it was propped by pillows; the pad of the compressor used in aneurism was brought to bear gently on the femoral artery, just after it passed off of the pubes; ordered twenty drops of tincture of opium, and fifteen of digitalis, to lower the action of the heart and throbbing vessels; ice was placed in bladders over the dressings, and along the course of the artery in the thigh; thus the bleeding was arrested. This bleeding was to be attributed to the man suddenly sitting up in the bed, and keeping this posture immediately after I left the ward in the morning. No doubt, the sudden change of position excited the violent emotion of the heart's action towards hastening, propelling onwards the current which broke down the recently glued parts, washed away the as yet not perfected plasma: visited at 9 P. M.; no return of the bleeding; flushing of the face and heat of body gone; he lies in the same position, perfectly horizontal, with the thigh propped up in almost a perpendicular direction; gentle pressure over the femoral artery near the groin, and ice over the dressings; the digitalis and opium to be continued every third hour.

March 17th. Slept quietly; no return whatever of the bleeding; circulation quiet; to continue the opium and digitalis; all drinks cold; milk, a little chicken tea.

18th. No return of bleeding; treatment as on yesterday; parts undisturbed.

20th. No return of the bleeding; so dressed the stump and placed it almost in the horizontal position, slightly raised, and supported at the end; the man complaining very much of the fatigue consequent upon the last day's constraint in the raised posture.

On the morning of the 22nd, at 6 o'clock, I was hastily summoned to see the man, and found him with arterial blood

flowing quickly from the same point as it occurred before, but far more rapidly, and in greater quantity. I elevated the limb again at right angles with the trunk, steadied it effectively in this position, put an aneurism clamp with moderate tightness over the femoral artery, high up, and then removed all dressings off the point through which the blood welled up, and put a small dossil of lint in the little hole, a larger over it, and then another, wider and firmer than the former, and upon this steady finger pressure; this I kept up for half an hour myself, and then had relays of students, who unflinchingly gave me their assistance for nine consecutive hours. During all this time the pressure was never suffered to relax; during all this time the same assiduous care characterized their efforts. The digitalis and opium were given internally in somewhat larger doses; and ice-bladders were laid over all the greater portion of the stump, and along the sides and forepart of the limb; to these combined, continuous, and well devised means, may be ascribed the staunching of the blood, the permanent sealing of the wound, the healing of the part, completed and perfected for ever. After this time no casualty occurred; and in one month after the operation the stump was perfect in every way; at this time I had a photograph taken of the man by a talented young friend, and from which the beautiful lithograph adorning these pages was traced and executed by the eminent engravers of the firm of Forster & Co., of this city; the stump is in every way beautiful in proportions; the flaps which, as before observed, seemed at first too large, now constitute a firm, compact, well-arranged cushion, amply covering the bone and their line of union well in front, and out of the way of pressure or injury. Soon after this I had an artificial leg made, upon which the stump rested firmly, and with which the man could walk about without the slightest pain or inconvenience; the end of the stump rested firmly upon a nice soft cushion, and he did not suffer or complain from jar or pressure. Thus he was going about, when ulceration of a very unhealthy character attacked the cicatrix after the burn on the right leg; it spread rapidly, and assumed a warty character; the entire surface, however, was destroyed, and the part is now just healed, and the poor fellow will be able to get about as well as ever; nothing can be more satisfactory than the state of the stump.

The plan and method of the operation which I have described are, I think, superior for many reasons to amputation at the knee-joint, independent altogether of those cases where the tibia is *extensively diseased*, and where the femur is only in a minor degree affected in its articular surface; but I

think it is preferable in all these cases where the leg is so extensively diseased, necrosed, or shattered by violence, that amputation at the knee-joint would be selected, as it is now, by many. I have no doubt whatever that in all cases the cartilaginous surface of the femur should be removed; according to the curved section I have described, cut in this way, the surface for support is just as extensive, wide, and expanded as when the cartilage is untouched; we find that in many of those cases where it has been retained, unpleasant symptoms have originated from its being attacked by ulceration, and sometimes death. Now, as to the preservation of the condyles to act as a guard to the cicatrix puckered into the hollow behind, a flap being made from the forepart of the limb; even should this security be deemed advisable, it is afforded by my section of the bone being curved a little more; there is no necessity for the risk being incurred of preserving the cartilages, for if the posterior flap be properly formed and brought up nicely in front, the cicatrix will be altogether out of the way of injury; it should not be forgotten, too, that some little difficulty may in certain cases pertain to getting a good covering for the condyles; yet in the hands of a skilful surgeon, this, I think, will not form an objection. The necessity for removing the articular cartilage in amputation at the tibio-tarsal articulation is admitted by all, for the very reason that I urge it in the knee. In the operation at the knee-joint, the patella also should be cut out; it is only in the way if retained, and may demand such a procedure at a later period. However admirable a measure amputation at the knee may be considered, it can never take the place of *excision of the joint:* it would then, indeed, cease to be a conservative measure. It is a source of the greatest gratification to me to see how steadily the later operation is holding its ground, and bearing ample fruit.

Since the publication of my memoirs on excision of the knee-joint, I have been watching with anxious care the results of the operation. The periodicals abound with cases. In the Number of the Lancet which has just appeared, while I pen these observations (August 4, 1860), there are nine cases recorded, out of which number one died, a miserable and unpromising case for any operation—"a strumous, delicate man, aged 37." "He had disease of the sternum, co-existing with the ulcerated state of the cartilages of the knee-joint." Evidently the creature was surcharged with scrofula. The remaining cases are reported as most successful in their results, in every instance a limb being secured of seemly proportions, and capable for its several requirements, save flexion. From care-

fully reading over and maturely considering the several reports of cases published within the last few years, I think I am borne out and confirmed in the several practical deductions which I arrived at, antecedent to this time, and which I laid down, as some supposed, in rather a peremptory manner; some of those opinions have been copied in my very words, and, I regret to say, without due acknowledgment.

I cannot conclude these observations in a better way, I conceive, than by again briefly condensing those directions which should guide the surgeon when he contemplates excision of the knee-joint, and advert to those truths which should give him a confidence in success.

The first and most important point to be considered is *the judicious selection of the case.* "In order that excision of the knee-joint may prove successful, it becomes imperative that the cases are carefully selected; by 'successful,' I imply not only the preservation of life, but also the saving of a limb, better than any artificial substitute, no matter how beautifully contrived. It is not applicable, for obvious reasons, where the bones entering into the articulation are very extensively diseased; for though I admit a better chance of preserving life would be secured by excision, even in this case, than by amputation, yet the member would be faulty as a means of progression; it would be short, and a useless appendage. I need scarcely make allusion to organic disease of the viscera as affording an insurmountable objection; but this applies, with equal force, to the non-propriety of amputation. In such a condition either operation becomes only justifiable to alleviate excruciating torture. I do not lay much stress upon the integuments being extensively disorganized, or think that such a state militates with any force against excision, for in numerous instances, after removing carious and dead bones, I have been forcibly struck by the remarkable rapidity with which the soft parts set up healthy action and recover themselves; parts undermined and sinuous when relieved from irritation, and set at rest, become very amenable to simple management. It has been objected to, that after resection the discharge is very great, and runs the patient rapidly into hectic. No doubt, the discharge from the divided surfaces is considerable—may be profuse—yet is healthy; it is essential to the process of reparation, and diminishes, day by day, according to judicious management; it is not so with the ichorous discharge created from the morbid action aroused by the presence of diseased and deadened bones, which, acting as the poisoning supply of the constitutional disturbance, seals the doom of the being unless

relieved by operative surgery. It should never be forgotten that resection of the knee-joint is only advocated as a substitute for amputation in certain cases, and not for the simple mode of incising the joint, to which practice Mr. Gay has recently directed the notice of the profession"[a]. Again, the same caution upon the necessity of carefully selecting the cases for excision is insisted upon in my second memoir[b], and published two years later, February, 1857. "In my former essay I forcibly dwelt upon the *necessity of carefully selecting the cases for excision*, and pointed out the prominent features which should influence the surgeon; but, I believe the caution has not been applied in every instance. I fear the panting after *éclât* has charmed away some from the stern dictates of judgment; yet I trust this may never be the case—infinite mischief is done by such rashness. Not only is the life of the patient jeopardized by an operation which cannot secure a useful limb for the purposes of life, but the operation itself is brought into disrepute, and open to the sarcastic criticism of those who know but little about it." "The applicability of the operation of excision of the knee-joint to cases of recent accident and gunshot wounds will depend upon the extent, and be estimated by *the amount of injury the soft parts*, including the vessels and nerves, have sustained, as well as that inflicted upon the bones. The practical surgeon will be able to compute with accuracy, after careful examination of the parts, how far this method of preservative surgery can be put into practice, and trusted to with hopes of success"[c].

I shall next consider the best mode of operating. In my first memoir[d] I have mentioned the several ways recommended by Park, Mülder, Moreau, MM. Sanson and Begin, Jaeger, Syme, Fergusson, Jones, and Mackenzie, exception alone being taken to that of Mr. Syme, and in these words[e]:—"Amongst the many modes of incising the soft parts which I have mentioned there is not one to which exception can fairly be taken except that of Mr. Syme. He advises an elliptical piece to be cut from the anterior wall of the joint, included in the arms of the ellipse, the patella. I do not for a moment doubt the propriety of removing the bone when diseased; but I know no condition that can warrant the cutting away of the flaps; if they are in a properly healthy state, they will not be found too great; after a little time, they will adapt themselves by contraction to the altered state of the parts beneath; if they are perforated

[a] First Memoir, February, 1855, page 48. [b] Page 58
[c] First Memoir, page 49. [d] Page 50. [e] Page 55.

by sinuses, and present an appearance which by some may be called disease, they will recover themselves after the carious bones are removed, and not be found too extensive, but will constitute an accurate involucrum for the divided osseous surfaces." The mode of proceeding which I consider best is that described in my first memoir, at page 23, in reference to my first case:—"The patient was placed upon a table, lying on his back, and in a few minutes brought under the anæsthetic influence of chloroform. The leg, at extreme of extension, was steadied; the sole of the foot being planted upon the table and held so, forcibly, while the thigh was rigidly fixed by a second assistant. Standing on the left side of the patient, I leant over the knee, steadying its outer side against my chest, and with a strong scalpel cut along the inner side of the joint to about the extent of five inches. This incision was commenced below, at a point about two inches lower than the articulating surface of the tibia, and corresponding to a line a little anterior to its inner sharp edge; the knife was at once thrust down to the bone, and, holding the same relationship, was carried upwards along the femur for three inches; the saphena vein was thus gradually left behind the track of the wound. A similar incision was rapidly made on the outside, commencing below the head of the fibula, and carried upwards above the external condyle; through the entire extent of this, too, the knife was swept along the bones. Both vertical incisions being completed, they were connected with a transverse one, passing an inch above the attachment of the ligamentum patellæ to the tibia; the latter wound opened the joint fully; the lower flap was freed downwards a short way, while that containing the patella was directed upwards, but with some difficulty, owing to the thick, matted cellulo-fibrous tissues which constituted its bulk. The internal and external lateral ligaments were next divided, together with adventitious bands, the result of organized lymph deposits; the anterior crucial ligament was destroyed, but the deeper fibres of the posterior remained intact, and incorporated by dense structure with the posterior ligament of the joint; these, in turn, were divided, but much difficulty was experienced in detaching them from the posterior surfaces of the bones, with due consideration for the popliteal vessels, which not only lay upon the dense elastic material, but were embedded in it. The knife was then rapidly swept round the condyles of the femur, the disease not extending higher. In the same way the articulating end of the tibia was freed from the soft parts around its circumference; the ligamentous structures being thus cut through, the

leg was forcibly flexed, and the ends of the bones thrust forward.

"And now the accuracy of the diagnosis was fully verified. The femur presented its external condyle nearly all removed by caries, while the internal was not at all so extensively diseased, its posterior half being stripped of its cartilage of incrustation, and carious behind the intervening space; between the condyles was likewise carious: the external condyle of the tibia had its cartilages of incrustation removed, which was replaced by a thick fibrous substitute, while the internal presented its normal appearance (we had here strong evidence of the efforts of nature to check disease); the patella was quite carious, hollowed, and reduced to a complete shell; therefore it was dissected carefully out, the integuments in front and covering it being preserved together with the fibrous attachments implanted at its upper and lower edges. The bones being sufficiently exposed, I next proceeded to cut off their extremities, and for this purpose used the saw, which I prefer for amputations, its blade being turned in the supports and steadied so, it was easily passed behind the condyles of the femur, and made to cut forwards; a few movements were sufficient to complete the section. In a similar way its serrated edge was placed behind the tibia, and urged forwards so as to remove a thin, osseous slice, together with the surface of the bone. The head of the fibula was not diseased; lying below the surface of the tibia, it did not prevent the apposition of the bones; it was therefore left intact for this special reason, as well as that the attachment of the biceps should not be interfered with. The entire amount of bone removed measured two inches."

There are some points more minutely dwelt upon in the *operation* in *my second successful case*, published in my Reports in Operative Surgery[a], and which I shall quote. The operation was performed April 15, 1857, on a man aged twenty-seven years.—"The patient being placed under the influence of chloroform, I adopted the H incision, the cross line passing beneath the patella; the flaps were with rapidity dissected back, and the shreds of the crucial ligaments spared by disease were divided, and next the lateral ligaments; in freeing the ligamentous attachments to the bones behind, the greatest precaution was adopted; all being separated to the extent required, I swept the knife around the tibia and the femur, close to the attachment of the soft parts, and then took the saw bearing my name, and cut the bones from behind forwards.

[a] Dublin Quarterly Journal of Medical Science, November, 1857.

"It is necessary here to lay caution on the operator in using the saw. He should ever remember the altered position of the limb, to facilitate protrusion of the ends of the bones, and, according to the angle of elevation must the direction of the blade of the saw traverse. The simple rule I would lay down for the correct execution of the section is this:—The blade of the saw must pass in a direction parallel with a line drawn in the transverse axis of the articulating surface; accordingly, this procedure was carried out. Thus, when the limb is placed in a horizontal position, the one in which it is to be maintained for cure, the cut surfaces of the bones will lie evenly together, no space will intervene between them behind or before; the wide surfaces oppose each other; all disposition to gliding one from the other is guarded against, and the most favourable circumstances are insured for intimate union. In the published records of cases it will appear that in some instances the surgeon has had to apply the saw a second and a third time, to make the bones meet: if this be so, I am warranted in enforcing my advice.

"By section planned after this method the condyles of the femur, with their connecting osseous bond, to the depth of a quarter of an inch in thickness, were cut off. To warrant the removal of these parts, I may just state, the incrustating cartilages of the condyles were entirely removed; the head of the tibia was similarly affected, and, in addition, deep pits were excavated by caries in each condyle, to the depth of a quarter of an inch. This being effected, all the thickened and diseased synovial membrane was clipped away, and the disorganized fatty mass below the patella; not a trace of the interarticular cartilages remained; the patella was coated with lymph beneath, and appeared to have struggled healthily from the disease around; it was therefore suffered to remain. Thus, then, the accuracy of the diagnosis was established, and examination of the osseous surfaces pronounced them healthy. Three arteries which bled rather freely were next tied; the flaps at the transverse incision were brought together, and maintained so by five points of interrupted suture; and the lateral incisions were left open for the ready escape of blood and serum, the purging of the cut parts. The leg was with ease put into the straight position, and placed at once in the padded box splint I had prepared for its reception. A splint was then laid over the anterior part of the thigh, and the tapes fastened, sustaining upwards the hinged sides of the box; the foot was steadied by a footboard, falling into the grooves within, and thus the leg was pressed upwards so as to keep the divided osseous surfaces in

contact; lint steeped in cold water was laid along the lateral incisions, and maintained accurately in position by the sides of the box when elevated."

In my *third successful case of excision of the knee-joint* will be found some further precautions which should be borne in mind by the surgeon about to perform the operation[a].

I shall transcribe the case. Patient, aged 15:—

"On the 11th of January, 1858, I excised the joint, adopting the H incision; quickly the soft parts were divided and reflected, and cautiously they were freed from the bones behind. The ligamentous structures within the joint, the cartilages of incrustation of the three bones, were entirely removed, and the contiguous surfaces of the bones most extensively destroyed. The condyles of the femur were hollowed out and eaten away to about an inch in extent, while the surface of the tibia was also deeply excavated, corresponding to each condyle, the intervening part being irregularly removed, the patella was also deeply carious; hence I removed it at once from the upper flap. The diseased extremity of the femur was cut with the saw invented by myself, and the section made from behind forwards; and so likewise the unhealthy surface of the tibia. The section of the femur revealed a beautifully healthy aspect, while the section of the tibia showed a softened, irregular patch, about the size of a shilling, with a vascular fringe running round its confines, and separating it from the healthy bone outside. This appearance occasioned me to cut off another slice from the tibia, somewhat more than a quarter of an inch in thickness, and the section exposed a perfectly healthy condition, the normal arrangement of the bone. In all, there were about three-quarters of an inch, or a little more, of the tibia removed, and an inch and a half of the femur. The divided bloodvessels were small; no ligatures were required; and I at once placed the limb in the extended position, resting upon its posterior surface, in the apparatus which bears my name. Let it be borne in mind that, previous to the operation, the leg was considerably flexed and the hamstrings rigidly contracted. This condition offered serious opposition to the required posture at first, but by gentle, steady, and gradually increased force, they were compelled to yield. Now, in the adjustment of the bones, there is one practical point which I have not before alluded to, *neither is it noticed, so far as I am aware, by any*

[a] See my Reports in Operative Surgery, Dublin Quarterly Journal of Medical Science, February, 1859.

writer on this subject, namely, the caution that is requisite, when straightening the limb, *to guard against any portion of the soft parts from behind projecting forwards, and thus interposing between* the bones. Such an occurrence took place in this instance during my first efforts to get the limb into a horizontal posture, but I perceived and rectified it at once; however, it might be easily overlooked, and, I have no doubt, would interfere in a very material manner with the firm union of the bones, or their growth into each other—a consummation so ardently sought for in these cases. Now, this untoward circumstance may be guarded against by the following manœuvre: namely, to adjust accurately, while the leg is yet flexed, the posterior margin of the cut surfaces of the tibia and femur, and while the sharp edge of one bone rests upon that of the other, the tibia and femur are gently forced backwards until the opposed surfaces rest fairly against each other. During this manipulation, then, the bones are pressed up firmly against each other, as well as with an equal force backwards. By this precaution the interposition of any softened structure will be effectually prevented. After this manner, then, the bones were fairly applied to each other, and afterwards the flaps laid down. They were brought together throughout the tranverse incision by a few points of the interrupted suture, while some folds of lint were laid in the lateral ones, the object being twofold: first, to prevent any immediate flow of blood, and, secondly, at a later period, to permit a free escape from the part, so that purulent matter should not be pent up; the front splint was laid down, and each side of the box was then lifted, and an additional compress of lint placed over the wound at either side, so that an even, equable support was given, maintained. During this entire adjustment, from first to last, the leg was pressed up against the thigh; and, to secure it in this position, the foot-board slid into the grooves for its reception was most efficient, steadying also the foot at a right angle with the leg. An additional pad, wedge-shaped, was placed at the outer ankle, and projecting upwards, so as to maintain the foot in a straight line, and prevent any drooping outwards or eversion. The straps were then buckled round the box, and the patient, still under the influence of chloroform, removed carefully to bed. She, however, awoke from her sleep quite unaware that the operation had been performed."

The next question to be considered is, *what should be the mode of managing the limb after the operation?* I have answered this in each of the foregoing cases. *It should be at once forced into the horizontal position, and put up before the patient is re-*

moved from the operating table. I claim priority for this advice and most valuable maxim, because the very words I have written have been copied, and without acknowledgment. In my first memoir, 1855, p. 58, it is written: "Immediately after excision of the joint is accomplished, *before the patient is taken from the operating table, the limb should be placed in the extended position, and retained so immovably in a solid case,* such as I have described. In some instances it has been shown that the difficulty to force back the femur, and prevent its projecting in front, has been very great; by proper manipulation, this difficulty can be overcome without violence, by one or other of the following measures. Generally speaking, this, the milder method, will succeed: when the ends of the bones are cut away, gradual yet powerful extension, continued for ten or fifteen minutes, and longer if necessary, should be made upon the leg, so as to counteract, tire out, and subdue the violent contraction of the hamstring muscles. During this manœuvre the thigh should be gently, yet steadily, pressed backwards, so that the cut surfaces of the bones may be opposed to each other, and then, being pressed back into a straight line, and retained so by proper supports, they offer mechanical resistance to each other, and thus displacement is prevented; but if this method fails, and it will most likely do so in those cases where the leg has been for a length of time flexed upon the thigh, and the muscles have assumed a spastic contraction of a settled character—here I would most certainly recommend the surgeon to *divide the hamstring tendons, in preference to cutting off another piece of the healthy bone.* This becomes more imperative when the head of the fibula has not been removed, and the tendon of the biceps interfered with; it is the powerful and spasmodic action of these muscles, dragging the leg upwards and backwards, that creates to a great extent the deformity, by the thrusting of the thigh-bone forwards; *by their division, then,* not only is reduction easily secured, but all tendency to after displacement checked. *The limb,* I repeat it, *should be secured from the very first in the extended position,* and rigidly maintained so through the entire cure. In my mind the same arguments apply here as in the treatment of fractures of the thigh[a],—the object of the surgeon being in either case to avert spasm, and to obtain, as quickly as possible, a permanent osseous union between the disunited bones." And again, in my second memoir, the practice is as

[a] See my Essay on Fractures of the Thigh Bone, Dublin Quarterly Journal Medical Science, February, 1853.

forcibly inculcated at page 62: "I do not believe one word of the 'impossibility' of placing the limb in the straight position at once, and retaining it so; it can be done if the surgeon is up to his work; and this first adjustment can be made without any pain to the patient, as chloroform annihilates sensibility. I cannot find words to enforce, with the power I desire, the importance of this measure. Amongst the foregoing cases there are lamentable instances where it was not adhered to, and which, I trust, will appeal forcibly to the mind of every thinking man. Independent of the advantages of steadying the cut surfaces, the prevention of the divided bones from irritating the surrounding tender parts, the subjugation of all spasm, the limiting of the inflammation to the bounds only necessary for repair,—we have still another great benefit accruing from *putting up the limb at once*, namely, the mind of the patient is at rest; that protective watchfulness over it is removed, and which probably, prior to the operation, had caused nights of restlessness and want of sleep. The same apprehensiveness, when the bones are divided, will remain, aye, be increased, if the limb be not immediately fixed in the straight position; but if the control of the patient over the part be checked, he feels confident in the security; repose quickly follows, and sleep is generally induced; if not, opiates will act more certainly, pain being subdued."

I am confident that the box-splint which I have used in all my cases is by far the best apparatus for securing immobility of the divided parts in a proper axis, preventing projection forwards of the thigh-bone, keeping the divided osseous surfaces in contact, permitting a safe and ready way of dressing the limb without disturbance, and affording, at the same time, the greatest amount of ease and comfort to the patient under existing circumstances. The apparatus is figured as applied to one of my cases, in my Reports on Operative Surgery, and a description is thus given in my first memoir, two years before, at page 25: "The limb was placed in a horizontal position in a wooden case which I had made for the purpose. The sides were attached to the back part by hinges, so as to allow of being let down at the time of dressing; they were likewise of unequal lengths, the internal extending nearly as high as the ramus of the pubes, while the external passed up to the axilla, similar to the long splint used by me in fractures of the thigh; the lower end of each lateral piece presented on the inner surface a number of grooves about an inch apart, so that, when the sides were elevated, the foot-board was received into any opposite pair of them, according to the distance required; this

lower piece acted in two ways; not only did it maintain the foot at a right angle with the leg, but it steadied the sides, and prevented their being pressed inwards from their vertical direction by the tapes and buckles which girthed the apparatus on the outside. The box was supplied with hair-cushions, carefully adapted to its entire extent, some being covered with oiled silk. In addition to the posterior, lateral, and foot support, a broad splint, well padded, had to be placed over the anterior surface of the thigh, extending from a little below Poupart's ligament as far as the junction of the upper and middle thirds of the leg, and secured firmly down by the surrounding web-belts, so as to counteract the powerful tendency towards the distortion of the limb forwards. I have already mentioned that the external side of the case passed up to the axilla, the object being to secure the straight position for the limb. It was kept in contact with the trunk by a wide girth passed around both. The patient expressed himself as being very comfortable with the limb done up in this way, and it was satisfactory to the surgeon to behold it, every requirement seemed so entirely fulfilled."

Here, again, I wish to claim *priority* for *the application of the anterior splint, and likewise for the extension of the external one along the trunk, as also for the foot-board*, gently retaining the foot in a proper axis, and the tibia in contact with the femur; *it is a great error to suppose that this arrangement is not most advantageous, just as great as to suppose that the fractured extremities of a broken bone should not be placed in contact, or to argue that, because adapted, ulceration would be likely to follow.*

The more rigidly the limb can be united the better, for the reasons expressed at p. 59, Memoir I.:—"Some operators contend that a slight degree of flexion and extension is desirable after excision of the knee-joint. To this opinion I cannot subscribe for two reasons: first, because as a means of sustentation the limb would be found inadequate, and not so sightly in appearance; secondly, the very motion perpetuated between these bones, already prone to carry on unhealthy action, would become an exciting cause for a renewed development of disease. No; I conceive for perfection as a result of excision, *the tibia and femur should be grown into each other and bound by callus:* and, far better still, when the patella, deprived of its cartilage, and undisturbed from its birth in front, becomes fused into this connexion. A limb cured in this way will harmlessly endure the fatigues of travel. An objection has been made to uniting the limb in one solid piece, on the grounds of its liability to fracture being far greater than when some motion is

permitted between the bones. My answer is, such a result has never taken place; and I am equally certain that the force required to break the callus union or limb in any part of its length would entail far more grave and serious mischief if applied to a limb enjoying partial motion; in the latter, the fibro-ligamentous structures would be all torn up from their connexions, and, as a sequence, high and active inflammation readily set up, followed by the rapid formation of matter, and all its train of serious consequences. Even suppose this burst of mischief checked by energetic treatment, the danger would not be removed; a slow, insidious action would rouse up the latent disease, which in turn would prey upon the general health, until the only chance of preserving life would centre in amputation. Now, in the former case, no such dismal consequences present themselves; the fractured limb might be brought to its full length, and maintained so by the application of the long splint, until union be again accomplished." I have laid great stress upon *the careful dressing of the wound, and the free administration of sedatives, stimulants, and support at suitable times in these cases,* and most strongly insisted upon the practice[a]. "The amount of success following all severe operative measures greatly depends upon the care and assiduity bestowed on the after-treatment, both locally and constitutionally. Probably, in the entire range of operative surgery, there is no class of cases which demands such close and attentive looking-after as that now under consideration. It will not be sufficient for the surgeon after he completes a severe resection, be it in ever so masterly a manner, to delegate his duties to another, and, after he puts aside the knife to consider his part done. No; if he is desirous of success, he must use his own hands, and be the dresser, while by his watchful eye he will readily discover the early threatening of incipient mischief. After all severe surgical operations I am in the habit of supplying stimulants and sedatives very freely, together with nutritious food apportioned to the assimilating powers of the individual. This treatment is more imperatively urgent when the patient is advanced in life, and has endured lingering disease for a length of time. It is, I would say, equally necessary to the infant and the child; whereas, in reference to the middle periods of life, the diminution or increase of supply must to a great extent rest upon the judgment of the practitioner. By the copious administration of stimulants the flagging powers of life are upheld; by the free exhibition of sedatives, pain and irritation and spasm are

[a] First Memoir, page 59.

subdued." Relative to the shock of the operation and the administration of chloroform, I have thus written[a]:—"*Happily, the shock now need not be so greatly estimated or dwelt upon.* Chloroform protects the sufferer; and I certainly attribute much of the success which in latter days has attended this formidable operation, to the beneficial agency of this potent medicine. In nearly all the cases which I have collected, it has been used; in every successful instance narrated it has been given. In the case upon which I operated, the man was reduced to the lowest state, and would almost to a certainty have sunk from the shock either after amputation or excision; yet by this powerful means all violent struggles were prevented, and, of course, the patient saved from subsequent exhaustion. How different this tranquil sleep from the writhing torture of the sufferer under a similar operation described by Sir Philip Crampton: "The poor girl, who, in coming into the operating room, exhibited the greatest fortitude, and even cheerfulness, on the instant that the knife was applied to the skin became so ungovernable that four strong assistants could with the utmost difficulty retain her upon the table. This necessarily prolonged the operation, and no doubt very much increased its severity; the removal of the divided extremity of the femur was here rendered a work of infinite difficulty and danger, as, when the knife was passing between the popliteal artery and the bone, and actually in contact with the former, no entreaty could induce the poor girl, *whom terror seemed to have deprived of her reason*, to remain for one moment at rest, she struggled so violently with both limbs"[b]. *In every case of resection which I have performed I have used chloroform, and to its administration I again repeat is due, I think, in a great measure the invariable success which I have met with.*

Briefly to recapitulate those directions for excision of the knee-joint, which I have laid down, and would still insist upon:—

1. *The judicious selection of the case.*—The bones not being diseased far beyond their articular surfaces; while, if upon section found to be a little more than had been expected, the part should be gouged out, or an additional thin slice removed; but, if to a greater extent, amputation should be at once resorted to, and, as recorded in my first memoir[c], with a hope of excellent success. Again, the Report goes on to show that amputation may be performed some days after excision, should

[a] First Memoir, page 54. [b] Dublin Hospital Reports, vol. iv., page 205.
[c] Page 64.

any unfortunate circumstance in the management of the case have arisen to demand it. In this same paper seven instances are recorded of amputation of the thigh, and all made rapid recovery, save one[a].

2. *The H incision should be preferred.*—The perpendicular strokes placed well back, so as to allow all fluids and discharges to drain off—far more effective and safer than any opening made in the popliteal space.

No portion of the flaps to be curtailed, though they may be thinned, of any thickened fibrinous matter or diseased synovial membrane; the latter, particularly, should be clipped away with a strong scissors. All ligamentous fibres, both around and within the joint, should be cut through, and the extremities of the bones fairly freed and exposed.

3. *The patella should be taken away in all cases, whether diseased or not,* and then the section of the bones, well thrust out in front, should be made with "Butcher's saw" from behind forward, due attention being paid to the axis of the thigh bone at the time of its division.

4. *All bleeding vessels should be tied, or any that have sprung and retracted should be drawn out and secured,* so as to guard against intermediary hemorrhage.

5. *While the patient is yet on the operating table, the limb should be placed in the horizontal position, either by gentle and steady traction, combined with pressure of the cut surfaces of the bones backwards, or, if necessary, the division of the hamstring tendons.* Their support behind, in every case, I look upon as of great value, therefore their section must be looked upon as a last expedient towards straightening the limb.

6. *During the adjustment of the bones, great caution should be exercised, that their surfaces be throughout their extent in contact, and that no soft parts intervene.* The flaps should be then laid down, and connected by suture closely throughout their transverse division, while the lateral incisions should be brought together only at their extremities by one or two points, and the central portion of each, that corresponding to the division of the bones, should not be brought in contact, but dressed lightly with lint soaked in oil, thus securing a ready outlet for the escape of fluids. The extremity should next be cautiously laid upon "Butcher's box splint," padded to the natural configuration of the limb, its sides elevated, foot-board applied, suitable pads introduced, and then the anterior splint laid on, taking the place of the assistant's hand, which, from the first,

[a] Page 65.

restrained the femur from projecting forward; then the straps buckled, the waist-band applied, and the patient may, with safety, be removed to his bed. The bed should be prepared in this way, and consist of a couple of hair mattresses laid one upon the other, evenly supported, and intervening between the upper one and the sheet a folded blanket, feather pillows for supporting the head and shoulders; the bed should be, likewise, moderately warmed, so as to prevent the patient being chilled when put into it.

7. *The limb should not be disturbed for several days;* the length of time depending a good deal on the season of the year when the operation is performed, whether it be in the heat of summer or the cold of winter. After five or six days it may be necessary to let down the sides of the box-splint, to sop up discharge, change lateral pads, and soiled dressings, &c. By the apparatus named, the facilities for cleansing the limb are so efficient, that it may not be requisite to lift the member from its support for even so long a period as three weeks, as evidenced in my own practice. Should, however, it be considered expedient to change all the dressings; the anterior splint should be steadily held back by an assistant, and the limb pressed up to it, thus guarding against any starting of the femur forwards, or displacement laterally, when lifted from its bed. When the box is prepared, freshly arranged, the limb, controlled after the manner mentioned, should be laid down, the side splints elevated, foot-board secured, and the straps over the anterior splint first tightened so as to maintain it in that position, from which it was never suffered to change. I would impress this advice still further—if the straps be unloosed for any purpose, *the hand of an assistant should steadily keep the anterior splint in its position, and well pressed back, until the artificial support is again brought to bear upon it, and fastened.*

8. *In cases where large abscesses form in the vicinity of the excised joint, or up along the thigh, Chassaignac's drainage tubes may be used with the best hopes of success*[a].

9. *The free administration of stimulants and sedatives, imperatively demanded in all cases of excision,* regulated, to a certain extent, by age, sex, temperament, and habit.

[a] See Butcher's Reports in Operative Surgery, Dublin Quarterly Journal of Medical Science, February, 1859.

Art. VIII.—*On some Actions performed by voluntary Muscles which by habit become involuntary; with Practical Applications.* Part II. By Jonathan Osborne, M. D., King's Professor of Materia Medica; Honorary Fellow of the King and Queen's College of Physicians in Ireland; Physician to Mercer's Hospital, &c., &c.

"Illustrans commoda vitæ."—Lucretius.

ACTIONS CONNECTED WITH RESPIRATION.

The act of inspiration is performed by muscles which have the structure of voluntary muscles, and in our waking hours are completely under the control of the will. We are able to accelerate, retard, or alter the capacity of our inspirations according as may be required for the purpose of speaking, or for other muscular exercises; but there is a certain limit beyond which our dominion over them ceases. Thus, during sleep, or during epileptic seizures, respirations are continued without any consciousness or effort on the part of the individual, and even when consciousness remains perfect there is a certain limit beyond which our dominion over them ceases. Whenever an individual strives to cease to breathe altogether, he finds it to be an impossibility. Among all the various modes by which the act of suicide has been accomplished, and under all the circumstances causing the unhappy individual to wish to extinguish life in the readiest manner, and without the aid of external instrumentation, yet no one has ever been found able to stop his breath simply by ceasing to contract his diaphragm and intercostal muscles. Even though possessed of the fortitude of a Cato, yet when he holds his breath for even a very few minutes, a faintishness ensues, in consequence of the interruption to the circulation through the lungs preventing the passage of the blood from the right to the left cavities of the heart; the voluntary power over the respiratory muscles is lost; the dominion of habit is unconsciously resumed; the diaphragm recommences its usual contractions; and air is readmitted as before.

The average number of respirations in health is about eighteen, or one-fourth of the number of pulsations of the heart. The proportion of respirations to pulsations is greatly increased in acute pleurisy, in consequence of the pain preventing full inspiration, while, in acute pericarditis, the proportions are completely reversed, from the greater excitement of the heart, and the comparatively small pain produced by inspiration, which, therefore, continues at nearly its usual rate. In violent

mental emotions the heart and the respiratory muscles are both equally thrown into excessive action; but in such cases the heaving of the chest or panting is much more remarkable in women than in men, from the respiration in the former being carried on more by the intercostal muscles, and less by the diaphragm, than in men. When we make a stethoscopic examination of the chest of an individual in this state of oppression from mental emotion, we hear the sounds belonging to imperfect closure of the left auriculo-ventricular opening; the mitral valves appear to be held down by a spasmodic action of their pillars: thence arises regurgitation of blood into the lungs, with all the symptoms appertaining to organic disease of the mitral valves, as long as it lasts, from which, indeed, it can be distinguished only by the fact that it occurs in a transitory, and not in a permanent manner.

On the other hand, the proportion of respirations is greatly diminished below the natural standard, when the mind is absorbed in anxious or sad reflections. In such cases the individual breathes not only with such long intervals, but with such imperfect inspirations, that he is forced every now and then to recollect himself, and to compensate for the deficiency by drawing in a full and complete inspiration. By doing this, he is enabled to forward the passage of the blood through the pulmonary vessels, and this relieves the turgescence of the right cavities of the heart. That this is the true explanation of the kind of oppression which prompts us to relieve ourselves by a deep inspiration called a sigh, is, in fact, proved from the late experiments of Piorry, published in a paper read at the Académie des Sciences, 1858. By the application of his plessimetre, he ascertained that repeated deep inspirations like sighs actually produced a diminution in the space occupied by the right cavities of the heart, and he states that in cases referred by him to spasmodic asthma prompt relief was obtained from taking these deep inspirations. To these observations I would add, that whenever the respiration becomes oppressed from over-exertion, a few very deep and deliberate inspirations afford infinitely more relief than a number of short ones. This may be easily tried by any individual *out of breath* from unusual muscular efforts. The most decided and actually the most speedy ease is obtained, not from rapidly panting, but from a few deep-drawn and rather tedious inspirations. Besides the mechanical assistance imparted to the free passage of the blood through the pulmonary vessels by the expansion of the chest in inspiration, the process of arterialization of the blood itself requires the respirations to be of a certain duration as well as depth.

This appears so obvious, that it is almost inconceivable how it should ever have been overlooked, and yet, that it has been overlooked, is evident, from the great discrepancies in the statements of different chemists of undoubted skill, who have published analyses of expired air, the carbonic acid according to some being 8, and according to others less than 4 per cent. It has, subsequently to the analyses now alluded to, been ascertained by Hervier and St. Lager (Académie des Sciences, 1849) that the air expired by persons running a race actually contained no carbonic acid at all. In such a case, then, all that rapid and short respirations can effect, is to diminish the congestion and strain on the right cavities of the heart, by forwarding the transmission of the blood through the lungs. But, notwithstanding all the respiratory efforts of the individual, still, no arterialization of the blood is effected, and the individual may be asphyxiated while he appears to be breathing with unusual celerity.

From these facts a practical conclusion follows, that, in as far as the function of respiration is performed by voluntary muscles, we should draw in each inspiration, fully and not in a hurried and incomplete manner, and that this caution is most necessary for those who, by reason of advanced age, or other depressing circumstances, labour under debility and passive dilatation of the right cavities of the heart. I consider that I have very materially diminished the dyspnœa of patients in chronic bronchitis and emphysema, but more especially in the disease so unhappily termed fatty heart, by exhorting them to attend to this particular. It is so apt to be neglected, that general directions are not sufficient, and it may be best to enjoin on such patients, or on persons of exclusively sedentary occupations, that three or four of the fullest inspirations should be taken at each hourly striking of the clock, with due caution, however, in case of the co-existence of valvular disease at the left side of the heart, lest a too rapid transmission of the blood from the lungs should augment the oppression in that quarter.

As the quantity of air taken in at each inspiration averages 20 cubic inches, and as the quantity of air remaining in the lungs averages 120 cubic inches, and as the air tubes conveying this air to the ultimate air vesicles of the lungs are in health incapable of dilatation, it follows, taking the number of inspirations as one in every three seconds, that nearly eighteen seconds must elapse before the external air is completely received into the lungs, and the result of this calculation approximates very nearly to the time required for the inhalation of chloroform before its anæsthetic effects are produced. And

here again, for the proper administration of chloroform vapour, the patient should be exhorted to take full and deep inspirations. Thus the anæsthesia is most speedily brought on; the constraint on respiration greatly reduced, and, consequently, the danger of asphyxia diminished.

A subject connected with respiration, which I have not seen anywhere noticed, is the arrangement by which the individual is protected from receiving back the air which he has expelled from his lungs. By the septum of the nose the column of expired air is divided into two separate jets. These are projected downwards from the nostrils at an angle of about 45° from the vertical axis, and divaricate from each other at an angle of 80°. It is easy to observe this on a cold and damp day, when the expired moisture is immediately condensed and rendered visible. Each jet is propelled to a distance of ten or twelve inches from the nose before it rises up and is dissolved in the surrounding air. Now, as an interval of only about one second intervenes between the going-out and coming-in jet, it follows, that if they moved exactly in the same line, much of the expired air would be received back again. But, in addition to the distance to which the expired air is projected by the force of expiration, which has been proved by experiment to exceed that of inspiration by one-third, we see here that the foul air is sent off in a lateral direction, never to return, as the fresh air is inspired from another direction, namely, that lying within the angle formed by the jets of expired air. And this separation is accomplished, no matter whether the individual is in the horizontal or vertical position, or whether stationary or in a state of progression, as is evident by holding a diagram in these different directions. It is only when lying on the side and inclining forwards that the direction of the underneath jet is interfered with; and this appears to be a principal cause of the general preference for lying on the back in summer, or during close weather[a].

This leads to the subject of respirators. The object of these instruments is to insure a certain uniformity of warmth and moisture in the air to be inspired. Now, in breathing through the nose, nature has made a provision for this purpose. The air, in the first place, has to pass through the hairs of the nose, which cross each other, and form a kind of veil, so as to intercept foreign particles floating in the air, like the gauze veils through which the air is pumped in modern ventilating machines. Next, the anfractuosities of the nasal passages commu-

[a] See Part I., vol. xxviii., page 121.

nicate to it both heat and moisture, before it arrives at the rima of the glottis. When we breathe through the mouth, not only are these advantages lost, but an unpleasant dryness is perceived in the mouth and fauces, the peculiar sensibility of which has not been adapted for the transmission of air, no more than the sensibility of the nose for the transmission of fluids. Hence, unless in some peculiar cases, respirators or other contrivances for warming the air to be inspired, should be always applied to the nose, and not to the mouth.

Tobacco-smoking, which is usually adopted as an amusement during the thoughtless and frivolous season of youth, after a short time establishes itself as a habit, and at length becomes an imperious necessity, continuing with many to the termination of their earthly existence[a]. The selection of this one plant for the purpose of smoking has arisen not merely from its fragrant or narcotic qualities, in which it is manifestly inferior to many others, but from its smoke being nearly free from creasote and the other pungent and suffocating products of the combustion of vegetable fibre, of which it contains only a very minute proportion. Add to this, that its two narcotic constituents, nicotine and nicotina, being both volatile, are at once, and at the first application of heat, drawn up from the pipe or cigar[b]. In our ordinary smoking the smoke is drawn into the mouth from the pipe or cigar, by opening the jaws and depressing the tongue, while the lips are compressed, so as to form a cavity as in the act of suction. The smoke thus received into one side of the mouth is let out at the other. None of it is inspired, except from what has passed into the circumambient air, and consequently the individual, if he avoids swallowing the saliva, may be scarcely affected by it. In some eastern countries a very different mode of smoking is adopted. The smoker actually inspires the smoke into his lungs as in the act of respiration. The narcotism thus produced may, in the uninitiated, be followed by serious and even

[a] And even beyond it, according to an old divine, who used to say, "Those who smoke here shall smoke hereafter."

[b] From a similar deficiency of vegetable fibre, cabbage-leaves are well adapted for mixing up with tobacco in the manufacture of inferior cigars. According to the experiments of M. Malapert, of Poitiers (Froriep. Jour., 1854), the nicotine drawn up in tobacco smoke is speedily condensed when not accompanied by moisture. Hence dry cigars are mildest, and the first half of a cigar always smokes milder than the last half, which contains both more watery vapour and also much of the nicotine condensed from the first half. Hence real amateurs of cigar-smoking throw away the last half of each cigar. In smoking with the ordinary pipe, much of the nicotine is absorbed by the pipe-clay; the smoke also becomes milder when the tube is long and the bowl small. Much of the nicotine, along with other matters, is got rid of by smoking through water, as in the Chinese pipes.

fatal results. I once had the happiness of knowing a gentleman, a native of Greece (since dead), who showed me this mode of smoking. He drew a long inspiration from the pipe, and when he expelled it from his chest the quantity of smoke emitted seemed prodigious, so that in the one whiff he appeared to have nearly filled a large apartment[a]. He informed me that some English officers in his company, during the war in Greece, attempted to smoke in this way, notwithstanding his cautions against it. After a very few inspirations, they became sick and faint, began to stagger, and, although long accustomed to ordinary smoking, would have fallen down had it not been for his assistance. Were it ever to become a desirable object in medicine or surgery to produce syncope within a short period of time, perhaps no more ready method than this could be adopted.

The practice of smoking has now, within three centuries, established its dominion over the whole world, in spite of the Counterblast of a King of England, in spite of the Pope Urban VIII., in spite of the Sultan, of the King of Prussia, of the Czar of Muscovy, who punished smokers first with the knout, and afterwards with death; and is now so firmly established as to be not only tolerated, but recognised as furnishing one of the most important sources of public revenue to every civilized country. After the numerous remonstrances against it from philanthropists and divines, it appears a vain task for the medical profession to continue their opposition. Its rapid increase, however, within the last few years, justifies us in renewing our protests. To the physician it more especially belongs to denounce it, from the knowledge which he possesses of the paralyzing effects of tobacco, not exercised so much on the sentient nerves as on the heart itself,—the centre of life and motion. True it is, that men overworked in mind or body are soothed by tobacco-smoking, but, when largely and habitually indulged in, as it often is by those who have no such apology[b], although its dangers are overcome by the law of habit, to which all narcotics are subject, yet it not only produces listlessness and apathy, impairing the energies of youth, but in many instances induces a necessity for the use of vinous or spirituous liquors, in order to combat the sensations of relaxation and lassitude which are its necessary result. There are many other evils not belonging to the subject of this paper to detail: one peculiar

[a] "Faucibus ingentem fumum mirabile dictu
Evomit involvitque domum caligine cæcâ."—Virg. Æneid, viii. 252.

[b] According to the Report of the University Commissioners (1850), a student's tobacco bill often amounts to £40 a year.

symptom, however, caused by tobacco-smoking, which I have not seen elsewhere described, I take this opportunity of mentioning. It is this: the smoker feels a pain, dull, and, although not acute, yet distressing, from the constant sense of oppression which attends it. Its seat is behind the breast bone, and rather tending to the left side. It is neither aggravated nor diminished by full inspiration, nor by any change of posture; comes on usually in the afternoon, but irrespectively of meals, and sometimes increases in severity during the night, so as to interfere with sleep, yet almost completely vanishes before morning, and this without any appreciable disturbance of the circulation, respiration, or digestion. My attention was first directed to it by a gentleman, at that time attending the clinic at Sir Patrick Dun's Hospital, who having contracted the habit of smoking, suffered much from this pain, which resisted every remedy till he gave up his pipe altogether. Within less than a month afterwards it ceased, and never returned. I have subsequently met several similar cases, and in some of these ordered only the most insignificant medicines, but always insisted on a total abstinence from smoking, and in every instance, as far as I have been able to ascertain, with uniform success. This affection, in all my cases, occurred before the middle age of life, did not appear to be produced by any one kind of tobacco more than another, attacking indifferently the votaries of Cavendish and Mundungus. From the vagueness of the seat of pain and its transitory character, it would appear to be a semi-paralytic, and consequently a neuralgic, affection of the central and anterior portions of the diaphragm.

Although the smoker merely passes the smoke from one side of his mouth to the other, and thus does not inspire it in the act of smoking, yet he cannot avoid inspiring some of the air which he has infected, and thus he always receives some of it into his lungs. The amount received is greatest when a number of smokers are congregated together in a small apartment, but is much reduced when in the open air, and especially when he has the advantage of escaping from his own smoke by being in a state of progression. The extent to which the air may be contaminated even by a single smoker is readily perceived by the passengers following him along a public road, many of whom, even at a distance, may inhale more of the smoke than the smoker himself. The effects of tobacco-smoke on unoffending parties are sometimes very decided and important, although generally overlooked. In the case of a printer's apprentice lately in Mercer's Hospital, it was evident that the præcordial pain above described, which he had in a high degree,

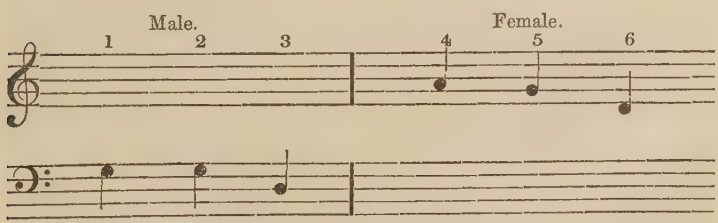
was caused by the atmosphere of smoke raised by his companions, rather than by any of his own production, for he did not get rid of it till he quitted the workshop.

And now, for a more general reflection suggested by these observations on smoking. If a single individual, by the expansive force of a few cubic inches of smoke passed from one side of his mouth to the other, can affect, as he does, all within a circle of twenty yards, or upwards, to what extent is it not in the power of every individual to affect others, when expiring twenty cubic inches from the air-tubes of his lungs in the course of ordinary respiration? And what limit can we fix to his power of polluting the air, and of spreading the matter of contagion, if it happens to be present in his system? The mixture of airs, which has passed through so many lungs, which we are obliged to breathe, when living in society, is truly formidable in a medical point of view. In any, even the largest public edifices, it is certain that some of the air expired by each individual present will be respired by all the rest, and it certainly should tend to lower the fastidious and exclusive notions belonging to rank and station when the patrician finds himself condemned by the decree of Providence, if not to drink out of the same cup, yet to do what is by far more disgusting, to inspire the air which has just passed out of the lungs of the vilest of the plebeian crowd standing before him.

VIBRATION OF THE RIBS AND PITCH OF THE VOICE.

That vibration of the ribs, which is perceptible when we place the hand on the side of a person speaking, belongs only to adults. For its production a certain depth of voice is required, which never exists in children, and is of very rare occurrence in females. It is most perceptible at the arch of the ribs, near the spine. It is most perfect in health, and is not impeded by consolidation of the lung, nor by emphysema, but is very decidedly diminished in those parts which are occupied by effusions of fluid into the cavity of the pleura: and this fact in doubtful cases may assist in forming a diagnosis. Some phenomena connected with this vibration of the ribs have not as yet been fully investigated. Vibrations of many dense substances occur when low notes are sounded by a musical instrument, with sufficient loudness, in the same apartment. This is often perceived in a church, when the bass notes of an organ cause a tremor, not only in the boards of the flooring or seat where we happen to be placed, but frequently also in some of our own tendons, which may chance to be strung to that particular pitch. Now this vibration is produced

only by low notes, and is not excited by any other, no matter how loud. The same is the case with the ribs, as is easy to prove on any individual. If he sing the descending scale of the gamut, the vibration will not begin till he arrives at a certain low note. But the most remarkable fact is, that the highest note at which the ribs vibrate is the very note in which the individual habitually speaks. Let him speak in any other note, and especially in any higher note, then no vibration takes place. Now every one in his ordinary speech perseveres in using the one note, except in some cases of peculiar emphasis, or marked accent, when he sometimes uses the third or fifth of this, his speaking note. What are called inflections of voice, although constituting great beauties and varieties of elocution, are rarely more than varieties of loudness, or of quickness, or of pauses. Any other change in this respect, as may easily be proved on trial, attracts immediate notice as being unusual, and would be called singing. And again, if we apply our hands to the ribs of one singing, no vibrations of the ribs are perceived except on the occurrence of the one note, namely, the individual's habitual speaking note, or the notes below it. From this connexion between the highest note of vibration of the ribs and the habitual speaking note, the question at once arises—do they stand in the relation of cause and effect? It appears most probable, that an ease and a comfort are felt in speaking in unison with the highest vibrating note of the ribs, which involuntarily leads to the preference of that one note[a], and that thus is decided the pitch of the voice of every individual, which is so material an element in his identification and physical character as often to enable us to recognise him though unseen, when speaking in another apartment. In a circle of six persons associating more or less together, and who, if voice depended on imitation, should all speak in the same note or in octaves, the following are the speaking notes:—



A remarkable illustration of the connexion between the vibra-

[a] As the pace in walking is decided by the swing of the arms. See Part I., vol. xxviii. p. 132,

tion of the ribs and the speaking note, and which proves it to be necessary, and not accidental, is, that in singing, as is well-known, there is a constant tendency to become flat, but that in speaking, however long continued, this one speaking note is always maintained, and that, too, under circumstances of great oppression and fatigue.

It must not, however, be objected that the vibrations belonging to each individual rib, depending on its length and thickness, would cause each of them to vibrate to only one note, in which the others would not join, and that there should be as many vibrations to distinct notes as there are ribs. On the contrary, it is the entire osseous and ligamentous case of the thorax, bound together in one, which vibrates; and although most distinct in the ribs towards the axilla, yet it is participated in by them all, provided the voice is sufficiently deep and loud. According to my observations, the highest note at which vibration of the ribs can be produced is G below the staves of the treble clef. Before the adult age, and in females at any age, whatever connexion may exist between the speaking voice and the ribs, it cannot be perceived except in some exceedingly rare cases. The vibrations of the rings of the trachea, on the contrary, are to be felt in all cases throughout the whole range of the voice up to the false notes, where they cease; yet they are most distinct at the speaking voice note, and at this note, and near to it, the singer always has his finest tones. In catarrhal hoarseness the voice-note is either entirely muffled by the thickening of the mucous membrane, so that the patient speaks in a whisper, except immediately after giving a hem to dislodge the mucus, or it assumes a slightly deeper tone, apparently from relaxation of the arytænoid muscles. This change of the speaking note, even when so trivial as not to amount to the interval of half a note, is at once taken notice of as causing an alteration in the characteristics of the individual, and when we hear an old friend speaking in this way, he scarcely appears to be the same person, and seems to have undergone a temporary estrangement from what he formerly was.

But it is in the last stage of Asiatic cholera that the voice undergoes the most extraordinary alteration. Here the patient speaks in a thin and sharp note, like that of the reed in a child's penny trumpet, *tenui modulatus avenâ;* and this squeaking, shrill voice, combined with the cadaverous aspect and marble coldness, strikes us with horror, as denoting a change in all that connected him not only with former intimacy and friendship, but with life and humanity. When we hear such

a sound proceeding from the lips of one in all other respects apparently dead, we can hardly divest ourselves of the idea that it is merely the result of some galvanical experiment performed on the cadaver, while the patient himself has actually left this scene of existence, and has passed into the precincts of the invisible world.

Loudness of voice is usually regulated by the requirements of our associates. Those who have for their companions persons of sharp hearing acquire imperceptibly the habit of speaking softly and almost in a whisper, but those who live with the deaf, or converse much out of doors, may learn to speak so loud as to be thought boisterous and noisy with others[a]. It has been observed that men who habitually speak *under their breath*, have either been solitary students, or else belong to the poorer and more obscure classes of society, who occupy small apartments, where loud speaking is never required, and who are accustomed to obey rather than to command. In the act of whispering, the air is articulated by means of the muscular apparatus of the mouth, and especially by the lips, while the larynx and trachea are restrained from vibrating. On placing the fingers on the front of the throat during a whisper, no vibration of these parts is perceived, and when the larynx has been destroyed by ulceration, and the voice is completely gone, still the power of whispering remains. In ordinary speaking the loudness depends on the force engaged in expiring the air to be articulated, and this again on the quantity of air taken in at each previous inspiration. That the quantity of air inspired should have much influence on the general health, is obvious from what has been already noticed, and also from the benefit derived from exercise, which acts chiefly by promoting the function of respiration. Want of exercise, as in persons of sedentary pursuits, has been always found to predispose to phthisis; and statistical observations are recorded which show that want of exercise of the vocal organs has that tendency in a high degree. Among those condemned to perpetual silence, as the deaf and dumb, the frequency of phthisis is notorious. Dr. Lombard, of Geneva, also found that in makers of watch-chains, engravers, and tailors, there were 171 cases of phthisis out of 1000; and that among soldiers and gendarmerie there were 200 out of 1000; but that, on the other hand, among those persons whose avocations obliged them to great use of their vocal organs, either by singing or speaking, they averaged

[a] Στέντορι εἰσαμένη μεγαλήτορι χαλκεοφώνω
Ὅς τόσον αὐδήσασχ' ὅσον ἄλλοι πεντηκοντα.—*Il.* v. 785.

only 75 cases out of the 1000. Hence, then, there was some apology to be offered for the parson who, when his parishioners remonstrated against the length of his sermons, replied, that he found long preaching was beneficial to his lungs.

ARTICULATION AND SPEECH.

When we come to the muscular apparatus used in articulation for the purposes of speech, an immense field of observation presents itself. Here we find every individual of the community, in the acquisition of the vernacular language during infancy, overcoming difficulties which would be impossible, were it not that we are both taught by imitation, and coerced by necessity. The perfection ultimately attained, and the readiness of utterance gained by many even in early infancy, would, if duly analyzed, be found to require a tact and rapidity of action surpassing by far those performances of manual dexterity, at which the world wonders. Even Paganini's performance on the violin would vanish into the shade before them; and yet all, sooner or later, before the fifth or sixth year accomplish this great task. Commencing with "*papa*" and "*mamma*," which are the first words learned in all languages, ancient and modern, the progress in the art of speaking advances according to the requirements of the individual; in some instances confined to the subjects of trade or agriculture, among which the lot of the individual is cast; in others attaining a degree of fluency which, considered *à priori*, would appear incredible. In Gibbon's memoirs of himself[a] he mentions that, as he was waiting in the manager's box, at the trial of Warren Hastings, he inquired of the short-hand writer how many words a ready and rapid orator might pronounce in an hour? The reply was from 7000 to 7500. Now the medium 7000 will afford 120 words in a minute; that is, an average of two words in each second.

We have in Herodotus[b] an account of a curious experiment instituted by Psammeticus, King of Egypt, with a view to ascertain the original language of mankind. For this purpose two new-born children were committed to the care of a shepherd, with strict injunctions that they should never be spoken to, and that they should be kept in a state of absolute seclusion, access being only allowed to the goats who supplied them with milk. At the end of two years, when the shepherd one morning opened the door, they suddenly called out the two syllables βεκος, which, being in the language of Phrygia the

[a] Vol. i. p. 172. [b] Herodotus, Clio, 2.

word signifying bread, was considered as decisive of the antiquity of that language. In this word, however, we see only two of the easiest articulated sounds; the first syllable, produced simply by closing the lips, might be learned from the goats, and the last produced by closing the rima of the glottis, might be both heard and learned in the act of coughing. Hence, although imperfect as a proof of the fact supposed to be ascertained by it, yet the account may be accepted as probable, and as illustrative of the first steps in learning the art of speaking.

The number ten, as being the sum of the fingers of both hands, is most convenient for carrying on the processes of mental arithmetic. Hence it is the basis of the decimal or Arabic notation, and in all languages appears to be adopted as the point of division, the numbers up to ten being simple, and afterwards compounded from it. This is certainly the case in Sanskrit, German, Greek, Latin, French, Welsh, and also in Arabic, Persian, Hindostanee, and Hebrew. The antiquity of the practice of finger-reckoning is recorded in one instance by Herodotus[a], where Ariston, on being informed, as he sat in council, that his wife had brought forth a son, makes a computation, on his fingers, as to the number of months which had elapsed since his marriage (*επι δακτυλων συμβαλλεομενος τους μηνας*), and Larcher in his note has quoted a passage to the same effect from Juvenal:—[b]

> "Felix nimirum qui tot per sæcula mortem
> Distulit, atque suos jam dextrâ computat annos."

This part of our subject is not unworthy of notice, inasmuch as it presents a direct evidence of connexion between the structure of words, and the structure of a part of our bodies most remote from the organs of speech.

But to return to articulation. In speaking, there are some combinations involving difficulties, which are seldom overcome till the child has attained an age of three or four years. Some of these are peculiar to certain nations, and are always more or less difficult to foreigners, such as *the* of the English, *cœur* of the French, the *ci* of the Italian, and many others, which belong to every language. The Shibboleth of the Hebrews, and the word *Cicero*, which was used to distinguish the French from the Italian at the Sicilian vespers, are historical examples of the same kind. In our own language there are some words which are never completely acquired by certain

[a] Erato, 63. [b] Sat. x., 248.

individuals, and form permanent imperfections in their speech. One cause of this is *the lisp*, caused by a too close approximation of the tongue to the upper incisor teeth in pronouncing the letter s, as in the following example:—"*Thith ith a therioth abthurdity.*" The burr is another frequent defect, caused by want of fixedness of the velum in pronouncing the letter r; and, in consequence of that part being very little under command, is rarely, if ever, to be cured, and generally continues more or less during life. Individuals thus affected, however, sometimes endeavour to remedy it, either by omitting the obnoxious letter in every possible case, or by pronouncing it with the lips, and thus they contrive to dispense with the use of the velum altogether. Of this there was a well-known example in an eminent member of our University, of whose mode of speaking the following specimen has been handed down to us, viz.:—"*If we aw to be depwived of ou wights and pwivileges, it mattaws little who aw to be ou mastaws.*"

The nasal sounds (as in *Sunday*, *Monday*) require that the passages through the posterior nares shall be open, and when the back of the pharnyx is swollen to such an amount as to close those passages, the nasal sound cannot be produced, and they are pronounced *Sudday*, *Mudday*. In cases of severe cynanche, when the tonsils are so enlarged as to come into contact, and to close the access of air by the mouth, suffocation must ensue if at the same time the posterior nares happen to be closed. Hence, in cases of this kind, it is advisable to try how the patient can pronounce these words, because any imperfection of them, combined with the anterior closure, would denote a state requiring immediate interference; and I cannot refrain from the suspicion, that many cases of sudden and unexpectedly fatal termination of sore throat might have been averted by an early attention to this point.

IMPEDIMENTS OF SPEECH.

The unfortunate individual who labours under an impediment of speech, in most cases also labours under an insensibility as to the disadvantages resulting from it. Accustomed to stammer from an early age (for it is always acquired in youth), he forms an under estimate of the amount and importance of his infirmity, and the politeness of his friends who wish to conceal the annoyance inflicted on them, contributes to keep up the delusion. Frequently, however, when made painfully sensible of the impatience of his auditors, or when peculiarly exposed to observation, as in the act of accosting strangers, he becomes agitated, makes renewed efforts, which

are only productive of increased difficulties, causing not only frightful distortions of the whole countenance, but also gesticulations of other parts of the body. Some there are who endeavour to escape observation, and shelter themselves in silence, but fewest of all are those who have sufficient energy and perseverance to overcome the defect, by a sedulous application of any one plan of treatment; and yet of several under my observation, at different times, I must say deliberately that I never saw one case that did not appear to me susceptible of great amendment, if not of complete recovery.

The stammerer, often from mimicry in the beginning, and then from repetition, unchecked, has acquired the habit of always repeating the first syllable of every sentence, and is unable to to go on under any other condition. Now this is to be prevented by recalling the vocal organs from the dominion of habit to the dominion of the will. The means of accomplishing this are the following, viz.:—

First, speaking in a much louder tone than usual, and keeping up the loud tone on every occasion, and without any relaxation, even among intimate friends, or when speaking on the most trivial subjects.

Second, imitation of good speakers, as public orators or actors, and the constant retention of some model of this kind before the mind. This recollection, constantly maintained, and constantly presenting an object for imitation, keeps the attention always alive, and thus dissevers the old associations of habit by forming a new one. In some cases it may be necessary to go further, and to adopt a formal and measured cadence, and even to speak in recitative, or in a style resembling ecclesiastical intoning; and it is well known that stammerers who have been instructed in music are able to sing without any hesitation or difficulty whatever.

Third, a sedulous avoidance of articulating any syllable *during inspiration*, a practice which is sooner or later acquired in stammering, and, as long as it is continued, always prevents a cure, and therefore must be attended to from the very commencement. The great desideratum, however, in all cases of impediments of speech is perseverance, and a fixed resolution to pass through an unceasing course of self-denying and laborious effort till the cure shall be accomplished. Of this perseverance we can propose to the patient the illustrious example of Demosthenes, who, according to Plutarch, cured himself of stammering by pronouncing verses and orations with pebbles in his mouth, and even when walking or running up steep places. In this kind of discipline he certainly ran the risk of swallow-

ing the pebbles, unless his attention was perpetually directed to the muscles engaged in articulation; but such were the means whereby he kept his attention on the stretch, and withheld them altogether from the dominion of previous habit. Although a physician would be unwilling to allow his patient to expose himself to the risk of swallowing stones, yet the future orator saw that nothing less would accomplish his object, or satisfy his fixed determination to accomplish it.

HABITS OF LANGUAGE.

To the same dominion of habit must be referred the utterance of words without meaning. Happily, the profane use of oaths has been almost abolished within the memory of this generation. At present it is confined to the lowest and most depraved classes of society, or to a few survivors of the old school, who, from early association, find it difficult to refrain. Without for one moment attempting to palliate the practice of swearing, it must be conceded that in the cases alluded to it may be much more the result of habit than of intention; and it must be admitted as a proof of the spread of religious influences, that what was so generally prevalent and so familiarized to both speakers and hearers at no distant period, has now been almost entirely driven from the field of observation. In this instance habit has been made to yield to the weight of higher motives, more generally diffused through all ranks of the population. There is, however, another kind of habitual and unmeaning utterance of words which unfortunately remains a subject for constant reproof and correction, and this is the repetition of the formularies of religion without entering into their meaning; thus causing them to become merely a muscular, and not a spiritual exercise. Of this we are repeatedly warned in the Gospels, and St. Paul has evidently the same danger in view when he directs us to make our *requests* known, here not using a word meaning our wants, which might be learned by rote; but rather the word meaning our actual present desires and solicitations (*αιτηματα*). In this passage he seems to speak from a personal experience of the tendency which we all have to let words run on without a participation of the mental faculties, and thus urges us to an active employment of both the intellect and the affections in all our supplications for the divine favour and assistance.

To pursue the same influence of habit on language—the use of cant words and pet phrases, acquired by individuals in their intercourse with others, and then unconsciously intruded into their own daily conversation, is matter of general observa-

tion, and requires a watchful course of education to eradicate or prevent. To go still further: so strong is the tendency to adhere to certain forms of expression, that even the best authors, ancient and modern, are found to confine themselves to certain selections of words, to the exclusion of all others. Thus in a copious language, as Greek or German, the learner has only to acquire a perfect knowledge of some of the first pages of each book in order greatly to facilitate his acquisition of the remainder. Perhaps no stronger illustration of the force of habit on language can be given than is supplied by this fact. Here a superior mind, capable of instructing others, and deeply interested in using the words most appropriate to express his ideas, yet moves in a harness, and is confined to a certain limited assortment of words and expressions, to the neglect of others, although he may be perfectly aware of their value and importance.

If, then, habit has the effect of rendering not only ordinary muscular actions, but even words involuntary, and if, as a necessary consequence, it involves with them also modes of expression and modes of thinking, thus determining the character of each individual, it appears impossible to over-estimate the importance of early education. Perhaps no class of the community has better opportunities of forming a judgment on this subject than the members of our profession. The medical practitioner, admitted as he is to the interior of households of all creeds and conditions, and called upon to visit them when most off their guard, cannot fail to have forced upon his notice the greatest variety of forms of selfishness fostered by unchecked habits of self-indulgence, and causing not only present misery, but leading to the degradation and downfall of families in the succeeding generation. The physician who sees humanity in the sick-room and on the death-bed, no less than at the fashionable watering-place, is sooner or later able to penetrate the secrets of character, however disguised so as to impose on the rest of the world. To him, the spoiled child, the heartless flirt, the youth who is lounging his life away, the habitual canting hypocrite, are all exposed in their naked colours; and when acquainted with their antecedents he usually sees in them only so many photographs of the depraved habits and sentiments of their predecessors; and this part of the subject cannot be concluded more appropriately than by referring to the Divine injunction, "Train up a child in the way he should go, and when he is old he will not depart from it," as embodying in the fewest words the great moral lesson to be derived from the consideration of voluntary actions, which, by habit, become involuntary.

Art. IX.—*Contributions to Operative Surgery.* By George H. Porter, M. B. T. C. D., F. R. C. S. I.; Surgeon to the Meath Hospital; Examiner on Surgery, Royal College of Surgeons, Ireland; Lecturer on Clinical Surgery; late Member of Council, Royal College of Surgeons, Ireland; Member of Council, Surgical Society of Ireland.

I. A NEW MODE OF DELIGATING THE FEMORAL ARTERY.

II. EXCISION OF THE ELBOW-JOINT FOR COMPOUND FRACTURE.

I. Many years ago my father suggested to several of his professional friends the adoption of an operation for the cure of popliteal aneurism, that appeared to be novel both in its mode of performance and the plan selected. Whilst engaged in investigating the pathology of this disease generally, he thought he had established the following facts:—First, that if a ligature is applied on an artery in any situation or part of its course, there is little or no danger of gangrene attacking the limb beyond it, the collateral circulation being always sufficient to support its vitality; but that, when mortification did happen, the occasional occurrence of which he was by no means prepared to deny, it was usually occasioned by the size of the tumour, or other cause obstructing the return of the venous blood, and, therefore (as he was wont to express it), there was more danger from the limb containing too much blood than too little. The very frequent and very successful ligature of the external iliac showed there was nothing compulsory in the selection of a part of the femoral beyond the profunda, in order to the limb being nourished, and that any other part of the trunk of the vessel might be selected with equal safety. Secondly, he had proved, at least to his own satisfaction, that the usually accepted local causes of secondary hemorrhage had really but slight influence: that it was of little importance whether the artery was extensively disturbed and separated from its natural connexions or not; or whether it was tied close to or at a distance from a collateral branch, provided such branch was at the cardiac side of the ligature, or whether the loop was tightly or loosely closed, or even whether the vessel was studded with specks of earthy senile degeneration, for he had witnessed and himself performed operations that were successful in despite of all these obstacles. He believed that hemorrhage arose more from constitutional than local causes; he used to state in his lectures that he had never seen an instance of it in a private family, or in a house where due attention was paid to cleanliness and ventilation; that in some hospitals it

was scarcely known, whilst in others it occurred with a harassing and perplexing frequency; and he showed that the inflammation which preceded and led to the hemorrhage was of the erysipelatous character, tending to ulceration, whilst that leading to obliteration of the vessel was adhesive. He professed, therefore, to feel but little apprehension of this formidable occurrence where the patient could be placed under satisfactory hygienic influences, and always, and in every instance, advised that no operation should be undertaken on any other conditions. But, thirdly, he regarded a wound or injury of the vein a source of great and often unavoidable danger in the operation as usually performed, and held the principle that no proceeding could be considered as safe and eligible, when such risk was incurred. In the second number of this Journal, for May, 1846, this part of the subject has been extensively discussed, and, therefore, it is needless to dwell farther on it here; but it may be observed that, if it be true that in the best hands, and with the greatest caution, not only may the vein be wounded, but that sometimes it is impossible to avoid it, and if the enclosure of a portion of that vessel within the noose of the ligature be inevitably fatal, surely the operation exposed to such contingencies cannot take a very high place amongst the resources of surgery. Actuated by these considerations, he proposed that the usual place selected for securing the femoral artery should be abandoned, and another chosen, which should at least be free from the last-named formidable objection.

After the artery has passed under Poupart's ligament, it lies quite superficial for nearly an inch of its course, accompanied by its vein, which is to its internal side, and just as superficial, and on a level with it. Any incision, therefore, by which this latter vessel could be endangered, must so far expose it to view as to render its avoidance easy, and any operation performed on this portion of the artery must be free from the objection above stated. Indeed, it is difficult to conceive how the vein could be injured, unless by the most absurd and culpable recklessness. But in this part of its course it gives off numerous branches, and the vicinity of any one, even of the smallest of these, would interfere with the formation of an internal coagulum, and with the subsequent process that ought to lead to the obliteration of the vessel. True, it does give off these branches immediately while passing under Poupart's ligament, or shortly afterwards; it gives off the circumflex ilii and epigastric, two large and important branches, quite sufficient to mar any operation, if this objection were really effective; but these branches would be above, or at the cardiac side

of the ligature, and experience proves that secondary hemorrhage does not take place in such situation. Moreover, there seems no reason for supposing that these branches would be more injurious in the case of a ligature placed below them, than would be the profunda in the old operation, which was always left above the cord in order to preserve the circulation of the limb. Lastly, the common carotid artery had been tied within a quarter of an inch of the bifurcation at the arteria innominata and the subclavian at the edge of the scalenus muscle; and, assuredly, if the presence of a large branch at or near the cardiac side of a ligature would prevent the obliteration of the vessel, such operations as these could scarcely have proved successful. But the femoral artery gives off, lower down, certain small and irregular branches—the external or superficial pudic, for instance—some of which must be below, or at the distal side of the ligature, the very situation where hemorrhage occurs, and where the presence of one ever so small may thus prove destructive. It may be so, but it has never been proved. On the contrary, where secondary bleeding has happened, the cause has always been in the ulceration of the artery at the ligature, and this, whether there was a collateral branch in the vicinity or not. There has been no lymph, no adhesive inflammation, no attempt at occlusion, although the space of an inch might intervene between the cord and the nearest branch, whereas in the many operations that have been successfully performed it seems impossible that all must have been so fortunately circumstanced as that not one should have had even a small or trivial collateral twig in the vicinity of the ligature at its distal side.

Supported by these considerations, it was suggested that the artery might be deligated safely and successfully at a point about half an inch below Poupart's ligament, where it lies superficial, where neither vein nor nerve could be exposed to danger, and where the collateral branches would be at a sufficient distance not to interfere with the subsequent process of obliteration, if such was really effective; and it was also proposed that the operation should be performed by a single incision parallel to Poupart's ligament, and of course transverse to the vessel, such incision giving the least disturbance to the artery in separating it from its adjacent connexions, and affording equal, if not greater facilities for passing the cord around it, and placing the wound in the most favourable position for healing subsequently. All that was required to insure success was, that the patient should be prepared for the operation for a few days by confinement to bed, a moderate diet, and gentle

aperient medicine; that he should be kept during the whole progress of the cure in a pure and wholesome atmosphere; and that, until the perfect cicatrization of the wound, he should observe the most absolute and perfect quietude. The importance of this latter condition will be made very apparent hereafter. At the time, however, these suggestions met with small encouragement. Few surgeons agreed in the pathology of the arterial system, and fewer still could be found willing to leave the beaten track, and adventure their own reputation and their patient's life on an operation wanting the sanction of experience. In the meantime, a case of popliteal aneurism was cured in the Richmond Hospital by mediate compression; another occurred in Jervis-street Hospital, and soon this method of treatment came to be ratified and confirmed by a course of success so unvarying and continued, that most surgeons began to regard the operation of securing the femoral artery as little more than a matter of bygone history, never more to be resorted to in the treatment of popliteal aneurism.

But in medicine there is no proposition universally true,—no mode of treatment applicable to every possible case. Doubtless, the operation of deligating the femoral artery at the usual place has totally fallen into abeyance, and probably has not been twice performed in Dublin during the last fifteen years, whilst the treatment by compression has been generally so successful, and has so entirely won the confidence of the profession, that very good and sufficient reasons would be required of any practitioner proposing to deviate from it. Such cases, nevertheless, must occasionally occur; sometimes the vessel may be so circumstanced that compression cannot be satisfactorily applied or maintained; sometimes the pain is so great (for it cannot be denied that the process is occasionally very painful) that the patient will choose any risk of operation rather than endure it; and sometimes we meet with persons so wayward and ungovernable, that no temporizing method can possibly be carried out with them. I have seen two cases in which, after compression had been tried, and failed, amputation was necessarily had recourse to, and in one of which the operation proved fatal. To meet such exceptional emergencies, the operation of taking up the femoral artery must be resorted to, and the sole question for discussion is, whether, in such eventuality, the operation I am about to describe is likely to be attended with less hazard than the old one, as performed in Scarpa's space. Perhaps the best description I can give will be a detail of the first case in which it was performed: I extract it from my father's case-book, and give it in his own words:—

John Neile, aged 40, by occupation a farmer, and of very healthy appearance, was admitted into the Meath Hospital, October 18, 1849, with a large pulsating tumour, occupying the middle and internal part of the right thigh, extending upwards to within a hand's-breadth of the groin, and downwards to within the same distance of the knee. Its measurement, both in the longitudinal and transverse directions, as far as could be ascertained, appeared to be about six inches; and the circumference of the affected limb, where the tumour was most prominent, three inches more than that of the other. Pressure on the artery, above, arrested the pulsation, and caused the tumour slightly to collapse, but it still remained very soft, and its contents were evidently quite fluid. There could be no doubt of its being an aneurism, and its history showed it to be one of no trifling importance. It appeared, that exactly six weeks previously, whilst sliding from a hay-stack, he struck on a pitchfork which had been left leaning upright against it, and wounded himself in the posterior part of the thigh, a short distance above the popliteal space: the wound, which was very small, and probably took an oblique direction, bled but little at the time, was not then, or subsequently, particularly painful, and was completely healed in three weeks, and (as he expressed it) he was as well as ever. About this period, however, when dressing one morning, a small, hard, painful, and pulsating tumour suddenly appeared in the middle of the thigh, about four inches above the cicatrix of the wound; it remained stationary, and of the same size, or nearly so, during the following twelve or fourteen days, when, from some sudden exertion, it began to increase very rapidly, and its pulsation to become more distinct. He then applied to a practitioner in the country, by whom he was advised to come to Dublin, where he arrived on the day of his admission into hospital. Although increasing so quickly as to threaten soon to become diffused, this was still a case of circumscribed aneurism, and therefore susceptible of cure on the principle of mediate compression; nevertheless, there was some hesitation in adopting that mode of treatment in this particular case. There was scarcely space, by any contrivance, for the application of two clamps on the trunk of the femoral artery. The superior border of the tumour was soft and badly defined, and it was possible that pressure applied on it might cause its rupture, and thus create the most unfavourable condition for future success. And, in the event of failure, it was dreaded lest the part which should afterwards be the seat of operation might be injured by the pressure. On the other hand, however, compression had been

so successful, and under such unpromising circumstances, that it was determined, in consultation, this poor patient should have the chance of any benefit to be derived from it, and accordingly, on the morning of the 19th, two clamps were applied, the pad of one directed immediately on the artery as it passes under Poupart's ligament, the other as closely as the shape of the instruments would permit below it, and the superior screwed down until the impulse of the artery was slightly imparted to it. He bore this with great firmness, although he said it was very painful, during an hour and a half, but on attempting to relieve him by tightening down the lower pad, it became manifest that our instruments were too imperfect to accomplish the object in view. Had the inferior been a ring-shaped clamp, it might possibly have succeeded; but, as it was, the broad posterior supports of the clamps interfered with each other, and by no contrivance could the operation of this lower instrument be maintained for two minutes together. It was worth remarking, also, that this instrument caused great pain, extending down the leg, and made the patient so restless and uneasy that he was constantly shifting himself, and thus rendering the pressure irregular and unsteady. In the face of these disadvantages the plan was persevered in, or perhaps it would be more correct to say, an attempt was made to persevere in it until evening, when it was of necessity abandoned, the pain being intense; the patient unable to bear the pressure of the superior for even ten minutes, and, what was of more importance, the tumour restrained in its growth superiorly, was extending rapidly down the thigh, in which direction it had increased more than an inch since morning. All the instruments were removed, and the patient, exhausted with so much suffering, had a tolerably tranquil night.

On the morning of the 20th the femoral artery was secured in the following manner:—

An incision, about an inch and three-quarters in length, was made *across* the direction of the artery, at the distance of half an inch below Poupart's ligament, and exactly parallel to it; this first incision very nearly exposed the vessel sufficiently, only a few touches of the knife being required to free it from its connexions, and allow the needle to be passed easily around it. Scarcely a teaspoonful of blood was lost, and he seemed to suffer very little until the moment the ligature was tied, when he complained of a pain shooting down the entire limb to the foot; it was, however, only momentary. On the artery being secured, the wound was closed with a strap or two of adhesive plaster, the limb bandaged with a flannel roller, and the

patient replaced in bed; the whole operation having occupied an incredibly short space of time.

The course of such cases, when they end favourably, is so well known that a minute detail of the progress of this one would prove insufferably tedious. It must be confessed that no little anxiety was felt for the results of a new operation, performed in somewhat a novel manner, and there was good reason for apprehension that the tumour would ultimately suppurate, as it was scarcely to be conceived that the absorbents could remove such a mass of blood; yet all these anticipations were most agreeably disappointed: the size of the tumour diminished sensibly from day to day, as ascertained by actual measurement; the sensibility and temperature of the limb were perfectly natural; the functions so regularly performed, that during the entire treatment the patient never required a grain of medicine; the only complaint he made was of confinement to the one position, which, however, he endured with the greatest patience.

On the morning of the nineteenth day the ligature came away, but the patient was kept in bed for three weeks longer, with the view of avoiding any possible irritation of the tumour, which might cause it to inflame and suppurate; but such precaution was probably unnecessary, for he never throughout the entire time showed an unfavourable symptom. He left the hospital on the 6th of December, having perfect use of his limb in every respect; the tumour being hard, firm, and unyielding, and reduced in size to that of a large walnut.

This operation was witnessed by many surgeons; it is noticed by Mr. Tufnell in his valuable Treatise on Aneurism, and the principle seems to have been adopted and acted on by my distinguished friend, Mr. Butcher, in a case of wounded artery, as detailed by him in the thirty-fifth Number of this Journal, for August, 1854. The same operation has been performed twice since by my father with very satisfactory results, but it would be both tiresome and useless to repeat the details, and I proceed at once to the history of the cases which have given occasion to the present remarks.

Daniel Downey, aged 29, of rather intemperate habits, was admitted into the Meath Hospital January 9, 1860. Just a week previously he had been working an engine during an entire night in endeavouring to extinguish a fire, and perceived on the following morning a small pulsating tumour on the internal and inferior part of the right thigh, which must have increased rapidly, as in this short time it had reached a very large size, measuring six inches in length, by three and a half

in breadth. It was soft, its contents evidently fluid; the pulsation violent, and pervading it throughout, and the *bruit de soufflet* particularly distinct. In other respects the patient appeared healthy.

January 11th. Two clamps were applied on the course of femoral artery, one of which was screwed down so as slightly to control the pulsation of the tumour; he bore the compression well, although he said it caused great pain, and it was kept up with tolerable constancy until the 20th, when it was remarked that the aneurism had become more solid, and the force of the pulsations diminished. The patient now became more unmanageable, and occasionally insisted on having the clamps relaxed or taken off; the tumour increased in size, and extended particularly in the direction of the popliteal space, but the pulsation diminished, and by the 27th (sixteen days from their first application) the instruments were removed altogether, pulsation having ceased.

February 2nd. The tumour had increased in size, become somewhat discoloured on its surface, and in two or three places afforded a distinct sense of fluctuation; it was evidently about to suppurate; but as the condition of the artery in connexion with it was uncertain, it was determined to watch the progress of the case carefully, but not to interfere actively with it. On the 13th the wisdom of this determination became apparent, for a strong and decided pulsation returned in the tumour, and it was plain that the vessel was still open, and communicating with the sac. In consultation it was considered that the patient's safety lay between amputation on the one hand, and ligature of the artery on the other, and I decided on giving him the chance of preserving the limb. On the 14th I performed the operation as recommended by my father; a transverse incision half an inch below Poupart's ligament, and about an inch and a half in length, quickly exposed the vessel, which was as quickly enclosed in a ligature. There was no bleeding, no pain, except at the moment I tightened the cord; no necessity for the use of chloroform; the whole procedure occupied but a few minutes, when the man was replaced in bed, with the limb in a semiflexed position, merely supported on a pillow under the knee, and covered with flannel. On the tightening of the ligature the tumour collapsed, and continued daily to diminish in size, although it remained soft, and ultimately required to be treated as an abscess, and in every respect the case progressed even more favourably than could have been expected from its early history.

Two circumstances in connexion with it are, however, es-

pecially worthy of observation. The wound at the groin did not heal as kindly as could have been wished; it became surrounded by a blush of inflammation, suppurated very abundantly, and showed little disposition to granulate: the ligature, however, remained firmly on the vessel until the 20th day (which is, I believe, a most favourable symptom), and then came away in the dressings. On the 9th March, twenty-five days after the operation, during a violent paroxysm of coughing, which shook the patient's entire system, blood gushed out from the wound, and he lost a considerable quantity. It was of a florid colour, flowed briskly, and appeared to come with some impetus. Mr. Townsend, our intelligent resident pupil, believing that it came, as it generally does, from the distal segment of the vessel, applied pressure below the margin of the wound without any benefit; he then compressed above, and all hemorrhage was at once commanded. It was evident the coughing had broken the thin and delicate layer of lymph that was about to close the vessel, which would be again replaced, and therefore there was but little cause for apprehension. Such was the fact; for although he bled a little on the occurrence of another fit of coughing in two days afterwards, in both instances it was easily commanded by gentle pressure, and in the end the wound healed kindly, and no case could have terminated more favourably.

With respect to the tumour, it was just as fortunate. In general a suppurating aneurismal sac forms a most unhealthy, unmanageable abscess, and many a limb, and indeed many a life, has been lost by its occurrence; but here it was happily quite the reverse. The sac was allowed to remain untouched until it seemed to be on the verge of bursting; it was then opened by a free incision, fully three inches in length, and an immense quantity of dark coagulated blood turned out, mixed with serum, and a comparatively small proportion of purulent matter. The cavity being completely emptied, its walls were laid down, retained by a very moderate degree of pressure, and so favourably did the case proceed, that the patient was up about the ward within a fortnight, and able to leave the hospital within a month after the sac had been opened.

Case III.—William Edwards, aged 40, admitted into the Meath Hospital on the 24th June, 1860, under the care of Mr. Smyly.

Eight or nine months previously he had noticed a small pulsating tumour in the left popliteal space, about the size of a walnut. He knew not what had occasioned it; and as it was not painful or inconvenient, gave but little attention to

it. On the 17th, a week before admission, he struck his leg against a cistern, when it began to swell, became exquisitely painful, and assumed the appearance it then presented. There was a large aneurism occupying the popliteal space, and extending upwards on the thigh; the leg was swollen, dark-coloured, and slightly œdematous; the skin of his leg thick and coriaceous, extensively marked with the cicatrices of former ulcers, and evidently unhealthy. In all other respects the patient's appearance was rather favourable. Immediately on admission mediate compression was adopted, and the clamps placed on the course of the femoral artery. They occasioned great pain, and such swelling of the limb that it was supposed the vein was compressed; and after being endured for three days, the instruments were abandoned, and digital compression substituted. It was soon found, however, that this mode of pressure was still more intolerable than the instrumental, and after a short trial the latter was again had recourse to; but after bearing this two days longer, the pain became so intense, and the aspect of the limb so alarming, that pressure of every kind was laid aside, and it was evident that (if at all) the limb could only be saved by operation. It was a most unpromising case. The tumour was large, and would probably suppurate; there could be no doubt it compressed the vein; the limb was already œdematous, and its appearance altogether unhealthy. Nevertheless, the loss of a leg is a terrible infliction to a person obliged to work for his livelihood, and Mr. Smyly resolved to endeavour to preserve it.

June 29th. The operation of deligating the femoral artery was performed in the manner and at the place already described, after which the limb was wrapped in flannel, warmth applied to the foot, and the most absolute rest enjoined. This treatment was persevered in, but the tumefaction never subsided; on the contrary, in a few days the foot swelled still more, became dark-coloured, and very painful, and on the 5th July vesications made their appearance on the dorsum of the foot; on the 6th Mr. Smyly made an incision into the mortified spot, which afforded much relief.

July 9th. On reaching for a vessel at some distance from his bed, he outstretched himself, and some blood flowed from the wound; its source could not be ascertained, and it was easily commanded by gentle pressure.

13th. The ligature came away; the tumour has become firm, and greatly reduced in size; the sloughing on the dorsum of the foot has ceased, and the mischief is limited to one ulcer, in which some of the tendons are unfortunately engaged.

He is, of course, very weak, and requires wine and nourishment, but in other respects is going on favourably.

April 1st. The patient is advancing rapidly to recovery, the wound of the operation healed, the aneurism greatly diminished, and quite solid; the only inconvenience he has to struggle against being the ulcer on the foot, which as yet shows little disposition to heal, and his strength is perhaps not as satisfactory as could be desired. He is still on full diet, and gets wine and porter.

August 19th. The report is—"The aneurism is quite cured." "There is still an ulcer on the dorsum of his foot, but his general health is very good, and he is fast recovering strength."

I confess that the point of interest which has induced me to publish these cases, and to which I wish to direct the attention of the profession, has reference to the question of secondary hemorrhage, that object of terror to all operators, and which has really proved such an obstacle to success. All surgeons of the present day believe that the vicinity of a collateral branch (however small) to the ligature, vitiates the process of union by preventing the effusion of agglutinative lymph; and, as far as I know, this is the only objection that can be raised to the principle of those operations I have just detailed. Mr. Erichsen, who may well be accepted as the exponent of British Surgery, in his splendid work, "The Science and Art of Surgery" (London, 1853), when treating of tying the femoral artery between the inferior edge of Poupart's ligagament and the origin of the profunda, says:—"Of twelve recorded cases, in which this artery has been tied, it would appear that three only succeeded, whilst in the remaining nine instances secondary hemorrhage occurred, which proved fatal in three, and in six was arrested by the ligature of the external iliac. This operation, I think, therefore, ought to be banished from surgery; and in all those cases of aneurism that are situated above the middle of the thigh, and in which sufficient space does not intervene between the giving off of the profunda and the upper part of the sac, for the application of a ligature to the superficial femoral, the external iliac should be tied, unless compression can be employed."

Certainly it requires no little confidence to question a doctrine thus authoritatively advanced, and universally received. But I must remind my readers, that up to this moment the operation on the femoral artery in this locality has always been exceptional, never adopted through choice—never resorted to unless when some strong objection existed to the selection of

Scarpa's space, which objection may be admitted as adverse, more or less, to the success of any operative proceeding. And in the cases alluded to by Mr. Erichsen, as far as I have been able to analyze them, this remark is fully borne out. Again, in the recorded cases of hemorrhage, I do not find any one instance proved to have been occasioned by the vicinity of a collateral branch; such vicinity may have existed, and probably did, but its injurious influence has in no case been demonstrated. As far as I know, destructive consecutive hemorrhage is always accompanied by the presence of unhealthy ulcerative inflammation and the absence of lymph; but I am not aware that these results have been traced to the presence of a collateral branch. It is very true, that when such branch exists, there will be no coagulum of blood within the vessel. Its absence may have originated the idea that the cause which prevented its formation, also prevented the deposition of coagulating lymph, but certainly the two results can have no connexion; and that they have not, is, I think, fully proved by the cases just related. There can be no question that two large collateral branches lay closely above the ligature, and that a layer of lymph was formed nevertheless. This lymph was so thin that the pulsation of the trunk of the vessel could be felt into the very wound, and so weak that it yielded and broke under the excitement of a violent cough, and permitted the escape of a considerable quantity of blood. This took place in both instances, but the lymph was adhesive and healthy, the bleeding easily controlled by slight pressure, and perfect recoveries the result. So long back as the year 1813, Mr. Travers noticed that "secondary hemorrhage sometimes results from the laceration of the young and tender cicatrix;" but, says he, "this is not to be classed amongst its natural causes." Now, if this can happen at the cardiac side of the ligature, when the young and tender cicatrix has to meet and stem the full stream of blood under the strong power of the heart's action, why may not the same happen at the distal side, or why should a collateral branch have an influence in one situation which it clearly does not possess in the other. The answer probably is, that the cause of the hemorrhage is not in the presence of the collateral branch, but in the kind of inflammation set up in the vessel; it is plastic, where it is to be obliterated; it is erysipelatous and ulcerative, where it bleeds. I am quite aware how little reliance can be placed on experiments on the lower animals for the elucidation of human pathology, and especially with regard to the arterial system; nevertheless, there is one circumstance that seems to bear

strongly on this point under consideration. I do not believe it possible to produce secondary hemorrhage in the inferior animal. We may ligature what vessel we please, and where we please, near to or at a distance from a collateral branch, and either above or below it, and the result is always the same, the perfect closure and obliteration of the vessel. But the inflammation in the lower animal is always healthy, always plastic; and whenever in the human subject it bears the same character, I believe it carries the same result. If this be the case, then, and it is a question of pathology which any inquirer may determine for himself, it will remove the chief, if not the only objection to an operation which is in other respects simple, comparatively safe, and easy of performance, free from pain and bleeding, and in which a wound of the vein is well nigh impossible. It is not pretended that secondary hemorrhage will not occur; to be sure it will, but not in this case more frequently than in any other, not from the cause to which it has been most frequently attributed, and certainly not in a more hopeless and irremediable form than where the artery is more deeply placed, as it is in the old operation. I have added two sketches, which illustrate the principal features of this operation.

II.—*Excision of the Elbow-joint for Compound Fracture.*

Until of late the implication of a joint by compound fracture was considered quite sufficient to condemn the injured limb to amputation. But "Conservative Surgery" now steps in, and suggests a milder and more scientific measure, to save (certainly not a perfect), but, in the majority of cases, a very useful member. Although excision of the elbow-joint has been for years an established procedure in cases of diseased bone, yet I believe it has not been performed in many cases for accident, at least I cannot find on record the particulars of any that may have been done; I therefore consider the following case will in some degree prove interesting to the practical surgeon, as illustrating in a marked manner the benefit arising from this operation in a case of compound fracture opening the articulation:—

George Thompson, aged 35, by occupation a house-painter, and of very intemperate habits, was admitted into the Meath Hospital on the 7th of January, 1860. The history of the accident was briefly as follows:—

He was standing on a ladder about ten feet in height, and engaged in painting a sign-board, a drunken man passing at the time staggered against it, and upset the patient; he came

Fig 1.

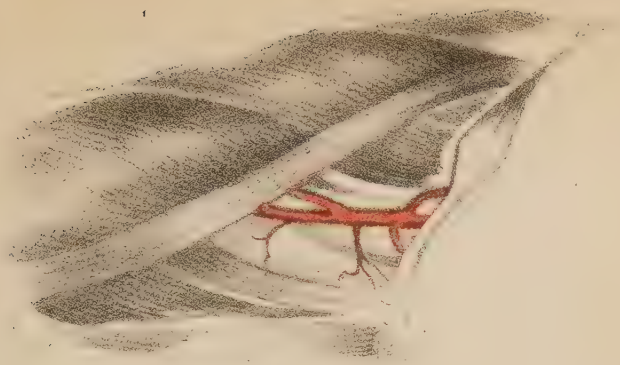
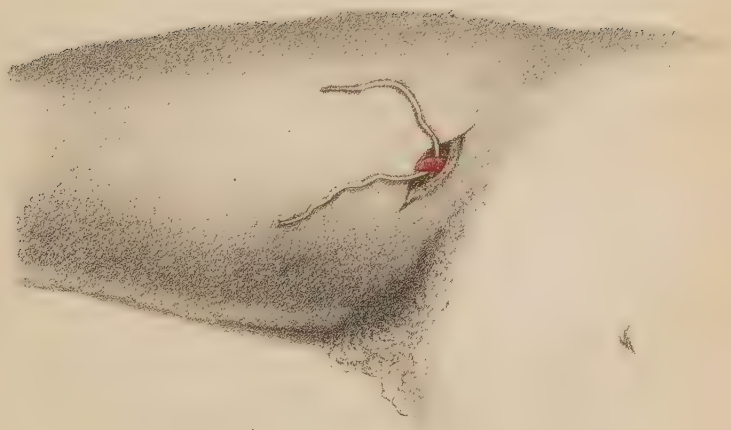


Fig. 2.



Mr George Porter on Deligation of the Femoral Artery.

to the ground on his left elbow, which received a compound fracture. When I visited him in half an hour after, I found him suffering great pain, and very much collapsed; the joint on examination presented considerable swelling, was unnaturally movable in all directions, and gave the sensation as if the part were filled with a number of small pebbles. There was a transverse wound one inch in length above the joint, and towards the outside, through this, I distinctly felt the broken humerus, and, on introducing a probe, considered that it passed directly into the cavity of the articulation. In consultation with my colleagues, it was decided to enlarge the wound, examine the state of the parts, if the joint was safe, merely to remove any loose portions of bone, but, if otherwise, to excise the articulation, and try to save the limb. Accordingly, having had the patient put thoroughly under the influence of chloroform, I made an incision five inches in length along the centre of the posterior aspect of the elbow, extending an equal distance above and below the articulation; this brought into view the transverse fracture of the humerus, just above the condyles; and on closer investigation I discovered a second fracture passing between the condyles into the joint. I then sawed off with a narrow-bladed saw the broken extremity of the humerus, and having made another incision an inch and a half in length from the middle of the former one towards the external condyle, severing the attachment of the triceps muscle from the olecranon, I seized the internal condyle in a strong forceps, and carefully dissected it out, all the time keeping the knife close to the bone; in like manner I removed the external condyle. My assistant now forcibly flexed the fore-arm on the arm; I then cleared the soft parts from the olecranon process of the ulna and head of the radius, and rapidly sawed them off. It is curious that throughout the entire operation I did not see the ulnar nerve; scarcely any blood was lost, two small arteries only requiring ligatures. The edges of the flaps were now brought evenly together, and retained by four points of silver-wire suture; the dressing consisted in applying wet lint to the wound, and bandaging the limb on a carefully padded rectangular splint; he was then placed in bed, felt quite cheerful after the operation, and expressed his gratitude for leaving him his arm. Ordered twenty drops of Battley's sedative liquor of opium.

January 8th. Had a good night, only complained of some slight twitching in the fingers. Pulse 80; tongue a little furred; no thirst. Ordered an aperient draught.

9th. Passed a quiet night; bowels not moved; water-dress-

ing applied to the wound, which looks healthy. To get a purgative bolus, beef-tea during the day, and the anodyne at night.

10th. Not so well to-day, very restless, and complains of headach; bowels freely moved.

11th. Feels worse this morning; was attacked by a severe rigor during the night, but obtained relief by the application of jars of warm water to his feet, and an anodyne draught containing twenty drops of Battley's sedative liquor; copious discharge of healthy pus from the wound, which was dressed with the usual water-dressing.

12th. Is much better to-day; had a very tranquil night. Tongue clean, bowels free. I this day removed the splint, and laid the limb in a rectangular box, resembling that recommended by my friend, Mr. Butcher, in the "Dublin Quarterly Journal" for February, 1859; and here I must bear testimony to its great utility in keeping the parts at such perfect rest, maintaining the limb in its proper position, and at the same time allowing the dressing of the wound to be completed with the utmost facility to the surgeon. I consider it in every respect a most ingenious and important apparatus for the treatment of these cases. Ordered four ounces of wine.

14th. Says he feels stronger; pulse 65; tongue clean; wound healthy-looking. Ordered a chicken. Two of the sutures came away this morning.

17th. No change since last report; he is daily gaining strength. Same treatment, and dressing continued. All the sutures out, the wound granulating in a healthy manner, and discharging less.

22nd. Somewhat feverish to-day; had a rigor last night, which lasted only a short time. Bowels confined, tongue white; complains of thirst; there is a slight blush of redness at the lower end of the wound. Ordered two grains of calomel in a pill, and a cathartic draught in three hours after; to have some jelly; to take bark in effervescence; a poultice to be applied to the elbow, and to have his wine as usual.

January 24th. Much improved in every way; redness quite gone; treatment to be continued as before.

30th. Nothing remarkable to mention since last report; has gone on in every particular most favourably; the splints and pads were from time to time readjusted.

February 5th. Wound healing well; the discharge has now nearly ceased; allowed to sit up in bed, the box and limb being well raised, and supported by pillows.

9th. In every respect going on well; the box laid aside;

I now made a light case with brown paper and starch, which reached from the shoulder to the wrist; its construction was exceedingly simple; having put strips of lint evenly over the limb, I placed three or four successive layers of strong brown paper softened in warm water, and afterwards smeared with starch over the lint; this all became dry in a few hours, and thus was formed a convenient, strong, and at the same time resisting support for the arm. An aperture, if required, for any corresponding sore or wound may be cut out with "Seutin's pliers," and the whole lined with chamois.

10th. The paper mould being perfectly dry and solid, I put the limb in a sling, and permitted the man to get up for the first time; he moves the fingers and wrist-joint with surprising freedom.

20th. Removed the paper splint; the limb was allowed to fall nearly into the straight position; the patient has no power to flex the forearm on the arm, but the parts about the elbow have a firm feel, as if they were becoming condensed; I this day tried the application of a new splint for cases of excision of the elbow-joint, invented by Mr. Christopher Heath, of London; it is certainly remarkably light-looking, and displays ingenuity in its constitution, but I was not able to continue its use; my patient could not bear it more than four hours, when he became most solicitous for its removal, saying it gave no support, the whole limb below the splint was found very much congested and swollen. I cannot, therefore, from the experience of it in my case, recommend it to others; I consider it would not be possible to apply it with sufficient firmness, without interfering with the circulation to an unpleasant degree; the paper case was again put on the arm in the evening, when the tumefaction had subsided.

March 1st. There was nothing of interest to note since last date; he is now looking in fine health, all his functions acting normally; he walks daily in the grounds of the hospital, and is able to grasp small objects, and lift them with the left hand. The wound is almost healed; the granulations of the transverse incision, being rather large and flabby, are touched every day with nitrate of silver.

12th. Wound quite healed; the splint taken off daily for some hours, and the arm merely supported in a strong sling; by giving him a little assistance, he now had the power of flexing the forearm on the arm in a great measure, and, when the limb was in the extended position, was able to pull towards him comparatively heavy objects. Nothing worthy of recording occurred from this date until he left the hospital on the

16th of April, at which period his arm was every day becoming stronger. He returned to let me see him at the end of June, when I found him possessing a very useful limb; he had the power of flexion to a great extent, and told me he was able to use the arm on many occasions in his wonted employment.

This case, then, I trust I may be permitted to consider had a most satisfactory termination, and affords a striking example of "conservative surgery." The accompanying lithograph exhibits faithfully the damage done to the articulation and the shaft of the humerus, as also the amount of bone removed in the operation.

Art. X.—*Pathological Researches.* By B. Wills Richardson, F. R. C. S. I., Member of the Court of Examiners of the Royal College of Surgeons in Ireland; one of the Secretaries to the Surgical Society of Ireland; Surgeon to the Adelaide Hospital.

(*Continued from* vol. xxviii. p. 322.)

8.—AMPUTATION AT THE KNEE FOR CARIES OF THE TIBIA COMMUNICATING WITH THE INTERIOR OF THE ARTICULATION: PERFECT RECOVERY.

William Udhe, aged 20, a performer in an itinerant band, was admitted into the Adelaide Hospital on the 2nd of November, 1859.

Some six months before admission, he accidentally received a severe kick on the head of the right tibia, from a man jumping off a cart. He was able to walk with his comrades for some time afterwards; but he cannot give the date of the subsequent swelling of the limb or knee.

In May last, he was so incapacitated from walking, in consequence of the affection of the knee and leg, that he was obliged to enter the Athlone Workhouse, where some pieces of exfoliated bone were discharged through fistulous openings in the anterior and upper part of the tibia. He remained in the hospital of that institution until the present month, when he was brought to Dublin.

Present Symptoms:—The greater portion of the right tibia is much diseased, with fistulous openings in its head. Through these apertures can be felt the exposed and carious bone, which is so soft, that the probe passed with slight force in any direction, either upwards almost into the joint, or downwards to the

Fig. 1.

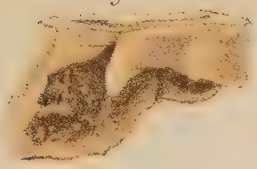


Fig. 2

Fig 3.

Fig. 4.

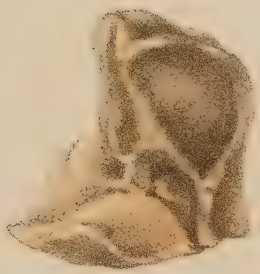
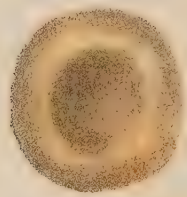


Fig 5



Mr. George Porter on Excision of the Elbow-joint

shaft of the bone. We could not, however, find any opening directly into the joint, although we suspected the presence of such. There was a projection from the outer condyle of the tibia, but it was perfectly fixed, and covered with apparently healthy integument. The knee-joint was much swollen, but not painful; neither was pain caused in it by pressing the heel, nor by moving it freely, although it permitted excessive lateral and rotatory motion. There was no shortening of the limb, but both bones of the leg were dislocated slightly outwards; skin hot; pulse 104 to 120, weak; appetite good; bowels natural; urine free from albumen, and deposited urate of ammonia copiously. He was put upon good diet, cod-liver oil, and syrup of iodide of iron, wine, &c. The leg was placed on a double inclined plane; and, from time to time, alterations in position and local and general treatment, were had recourse to, but without any amendment in the symptoms. His constitution now gave evidence of greater sympathy with the disease, and he became more pressing in his wish to have the limb removed. In consultation we agreed on amputation; and I determined to perform the operation at the knee, opening into the joint, and being guided by the state of the femur as to whether we should amputate higher up.

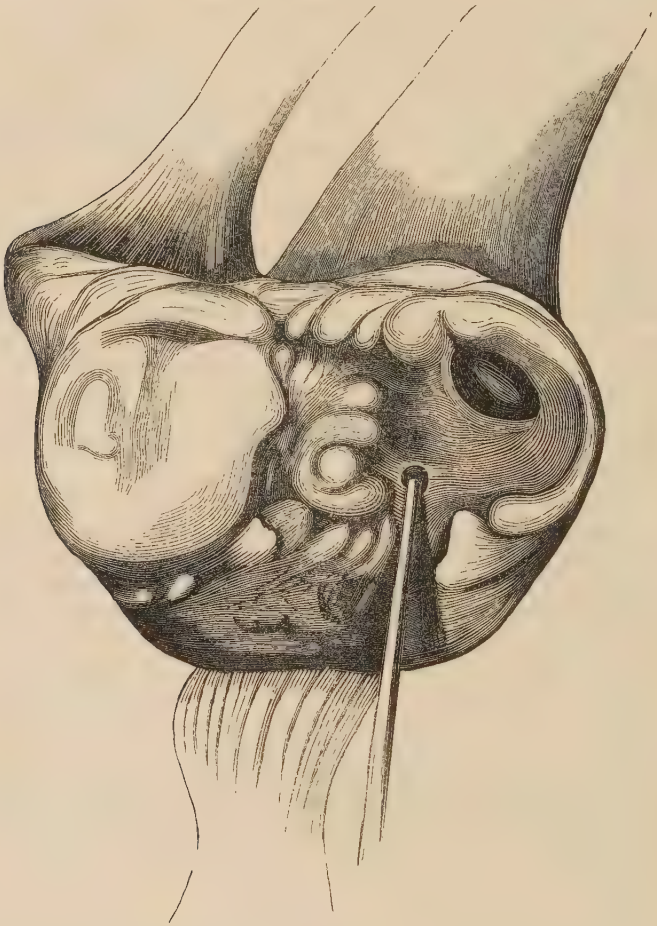
The operation was performed on the 22nd February, 1860, the patient being under the influence of chloroform. The proceeding I followed was that recommended by Mr. Syme. The tourniquet having been applied, so that the femoral artery might be compressed just at the opening in the adductor magnus,—an anterior semilunar incision "on a line with the lower edge of the patella" was then made; the skin, &c., was raised from the latter, and the joint was opened into; a long flap was then made from the calf of the leg; lastly, the condyles of the femur were sawn through, and removed.

During these proceedings it was observed that the crucial ligaments, both semilunar cartilages, as well as the investing cartilage of the femur and patella, had disappeared, and likewise that the synovial membrane was remarkably red and vascular.

Scarcely any blood was lost during the operation. We did not see the popliteal artery. Three or four vessels only required ligature: the largest at right angles to the face of the posterior flap, and, being in the situation of the origin of the anterior tibial, I presume was that vessel. With the exception of some sickness of stomach, there was not an unpleasant symptom, and the wound was perfectly consolidated on the 19th of April following.

The accompanying illustration represents the carious, roughened, and irregular state of the head of the tibia; and

Fig. 12.



the probe shows the situation of the opening into the joint. The posterior aspect of the bones is upwards.

On making a vertical section of the tibia, more than half the bone was found infiltrated with a tubercular cheesy-looking matter. This portion of the shaft was quite soft, and cut rea-

dily. We did not find any sequestrum in the head of the bone.

Unfortunately the patient is a remarkably stupid boy, a German, or the previous history of his case would have been more complete. I am inclined to think that the injury of the tibia was followed by strumous action in the osseous tissue, and that possibly a small abscess formed in it, which subsequently opened into the joint, causing destructive disease of the articulation.

My principal object in recording this case is for the purpose of adding to our statistical information relative to amputation at the knee, an operation which is at present engaging much of the attention of the profession. So far as this case goes, it is in favour of Mr. Syme's modification, as the stump turned out a very good one, and, when he left the hospital, bore pressure well. Surgeons differ, however, as to the best mode of performing the operation,—some dispensing with the large posterior flap, and the removal of the femoral condyles. In addition to the proceeding followed in this case, we have also the modification of Beclard, Rossi, Velpeau, Pancoast[a], Lane, and probably others. Mr. Lane "makes a large anterior cutaneous flap in front of the joint, right down to the insertion of the ligamentum patella, which is then reflected upwards, the knife being carried through the joint. A small posterior flap is then made, so that in the process of healing it shall draw the anterior flap over the articular surface. The patella is retained, and forms a round and smooth surface to rest upon, as in the flexed knee, the skin being likewise movable over it, as in the healthy joint"[b]. In one of the cases lately recorded by Mr. Fergusson, he "made flaps of equal length, which met below the condyles, the patella being removed, and none of the articular surface being taken away"[c]. Unfortunately, a fatal result ensued.

In case the surgeon imitate the proceeding of Mr. Syme,—the operation performed in this case,—it is of the greatest consequence that his advice should be followed in making the posterior flap "to the full extent of the fleshy part of the gastrocnemii muscles, care being taken, however, to avoid preserving more than a moderate portion in regard to thickness"[d]. The muscles were, however, so wasted in Udhe's case we thought it best to keep close to the bones, which accounts for our not seeing the popliteal artery during the operation.

[a] Fergusson's Surgery. [b] Braithwaite's Retrospect, vol. xli. [c] Ibid.
[d] London and Edinburgh Monthly Journal of Medical Science, May, 1845, p. 537.

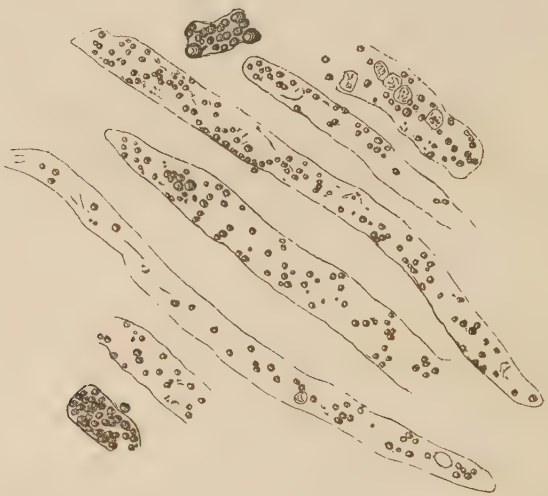
9.—DISCHARGE OF ENORMOUS QUANTITIES OF THE SO-CALLED OILY AND WAXY CASTS IN THE URINE; RAPID FATTY DEGENERATION OF THE KIDNEY.

George Armstrong, aged 18, a telegram clerk, admitted into the Adelaide Hospital, in May, 1860.

He states that four weeks previous to admission he was attacked with dull pain in the lumbar regions, accompanied by increased frequency of micturition. Shortly afterwards, swelling and puffiness of the eye-lids attracted his attention. When these symptoms had continued about a fortnight, his lower extremities began to swell. He was promptly placed under medical care; but, not getting better, and being unable to follow his occupation, he sought admission into hospital. He was not exposed to cold; had not any shivering; the urine had never the appearance of being bloody, and he was most temperate in his habits.

His symptoms on admission were ascites and general anasarca, the areolar tissue being extensively infiltrated. He

Fig. 13[a].



passed a tolerable quantity of urine, which was turbid—not smoky—acid, and highly albuminous; specific gravity 1·050[b];

[a] Oily casts. Outline drawn with a camera. Examined with Smith and Beck's one-fifth, and magnified about 250 diameters.

[b] The urinometer was tested, and found correct.

and deposited numbers of cells, resembling renal tube epithelium, but loaded with oil, and enormous quantities of the bodies which have been described as oily and waxy casts. A copious deposit was formed in the long glass each day, chiefly composed of these casts, which are represented in Figs. 13 and 14. He was pale; had the peculiar chlorotic aspect of a person far advanced in renal disease; the skin was cool; and the pulse 68 in the minute; he had no head symptoms; neither had he diarrhœa or vomiting.

Fig. 14[a].

Notwithstanding the apparently short duration of his illness the state of the urine caused the apprehension that the kidneys had already undergone serious structural change, and they were rapidly degenerating.

The treatment at first pursued consisted in the use of diaphoretics, which we subsequently changed for chalybeates, in consequence of his debility. In other respects his condition remained unchanged, the urine depositing daily the usual quantity of casts, and occasionally some uric acid crystals.

On Saturday, the 9th of June, he was seized with most violent vomiting and purging, which, although arrested by treatment, was succeeded by great prostration, from which he never rallied. He died the following evening, retaining his intellect to the last.

With some difficulty a *post-mortem* was obtained; our examination, however, was unavoidably limited to the renal organs. In opening the abdomen a large quantity of fluid was found in the peritoneum; the kidneys were of unequal size, the right weighing seven ounces, and the left five and a half: they were mottled, yellowish, flabby, and the capsule peeled off with facility. The cortical tissue, when cut into, was also yellow;

[a] Waxy casts.

and so great was the quantity of oil in their structure, that it was with some difficulty I could isolate a tube for the purpose of illustration. The tubes were stripped here and there of epithelium; and the latter, where existing, appeared dark and granular. There was evidently great obstruction to the circulation through these organs, as injected vessels were visible in different parts of the sections.

Fig. 15.

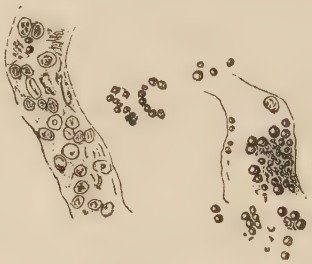


Fig. 15 represents two portions of the tubes, showing the great alteration the excreting structure of the kidneys had undergone.

Whether or not mischief had been going on in Armstrong's kidneys for any time before the irritability of bladder attracted his attention, I cannot venture to say. The history, however, leads me to think it was a case of rapid fatty degeneration, commencing about the time this symptom made its appearance. Be this as it may, when he first came under our observation, the urine gave unequivocal evidence of great organic change in the kidneys. For although occasionally persons have been known to recover in the acute disease, whose urine has deposited a few oily casts, it could not be anticipated that a person whose urine deposited such vast quantities of these casts as did our patient, would escape the dangerous consequences indicated by such a morbid state of the excretion.

10.—THORACIC ANEURISM, WITH AORTIC AND MITRAL VALVE DISEASE; SUBSIDENCE OF THE ANEURISMAL TUMOUR BEFORE DEATH.

John Errett, aged 50, cabinet-maker, admitted into the Adelaide Hospital, November 14, 1859. This man presented himself at the Dispensary during the preceding autumn. He then

had a pulsating tumour, of about two inches in diameter, in the right mammary region. The tumour had two sounds simulating those of the heart. Corresponding to its situation there was well-marked circumscribed dulness on percussion. The apex of the heart pulsated in the left mammary region; but as I only saw him for a few moments, I did not then make a very minute examination, expecting to see him in hospital in a few days. He was free from stridor, aphonia, neuralgia, or dysphagia. I lost sight of him for some time, when his wife called to say that he was anxious to be taken into the institution. He was accordingly admitted on the 15th of November, 1859. It was then evident that life was ebbing fast. His pulse was excessively weak and irregular; the surface of the body was cold and livid; and he was universally anasarcous.

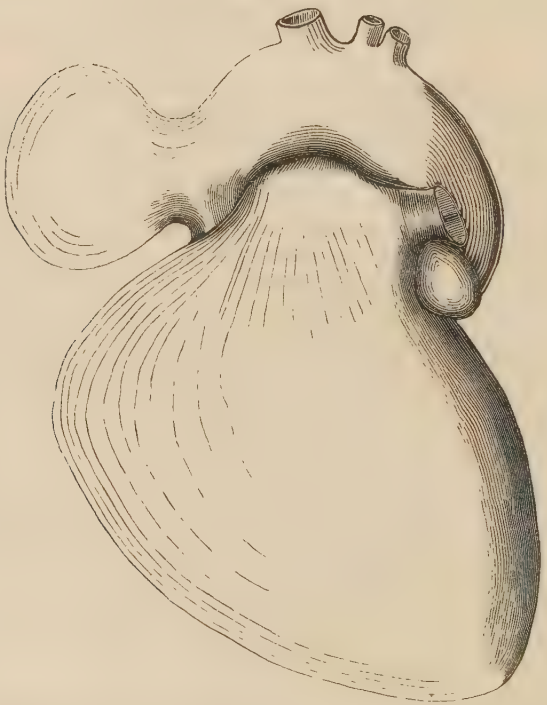
Our attention was now directed to the site of the tumour; but it was no longer visible, having disappeared about a month before. This subsidence of the swelling was not accompanied or followed by any symptom of internal thoracic pressure, if we except distension of the tributaries of the superior cava and some wheezing, the former of which might be also referred to and explained by mitral regurgitation. Having diagnosed thoracic aneurism when he first came under my observation, I need not say how anxious I was to discover the exact situation of the tumour. Accordingly, a most careful examination was made, and I again, but with great difficulty, detected the two sounds in the same place where they were originally heard; they were distant, and unaccompanied by murmur. When the stethoscope was applied to the cardiac region, a well-marked systolic murmur was heard at the apex; but, in consequence of the wheezing, we could not satisfactorily examine higher up, although we heard the two aneurismal sounds in the right mammary region. Careful percussion elicited a slightly dull sound in the original situation of the tumour. On pressing the palm of the hand firmly here, we thought a faint impulse was communicated to it. The chest was dull posteriorly and inferiorly; resonant in other parts. The pupil of the right eye was larger than that of the left.

It was evident, therefore, that although the tumour was no longer visible, it was still in existence. We were confirmed in this opinion by the presence of the systolic murmur at the apex of the heart allowing of a contrast being made between it and the two faint sounds in the right mammary region. He continued free from neuralgia, difficulty of swallowing, or stridor;

but the wheezing continued; and, from the dulness and absence of respiration, it was evident that fluid existed in the lower part of each pleura. He gradually sank, and died on the 17th of November, having previously expresssed a wish that I should examine his body.

Both pleura contained serum. An aneurismal tumour, about the size of a hen's egg, was perceived at the right side of the aorta. It had remarkably thin parietes, contained some apparently recently coagulated blood, and was almost perfectly free from laminated fibrine.

Fig. 16.



Although the aorta itself was diseased and expanded, the aortic valves closed pretty well, as proved by the water test; the mitral orifice was much enlarged, and its valves greatly diseased. The right side of the heart was also dilated.

It is not my intention to dwell upon the sounds heard in

this case, as the bronchitic râles present in the chest during life may have led to some error of observation. I think, however, the case had one point of interest well worthy of attention at the present time, when the medical treatment of aneurism engages so much consideration. It shows that an aneurismal tumour may undergo a remarkable subsidence for some time before death, without the slightest attempt at obliteration of the sac; and it holds out the caution not to assume, because an internal aneurism retires during our treatment, that we have effected its cure. It likewise shows us the necessity for a *post-mortem* examination in some cases of aneurism, in order to know positively whether a cure has been established.

Art. XI.—*An Account of some Parasitic Ova found attached to the Conjunctivæ of the Turtle's Eyes.* By Edwin Canton, F. R. C. S., Surgeon to the Charing Cross Hospital, and Lecturer on Surgical Anatomy.

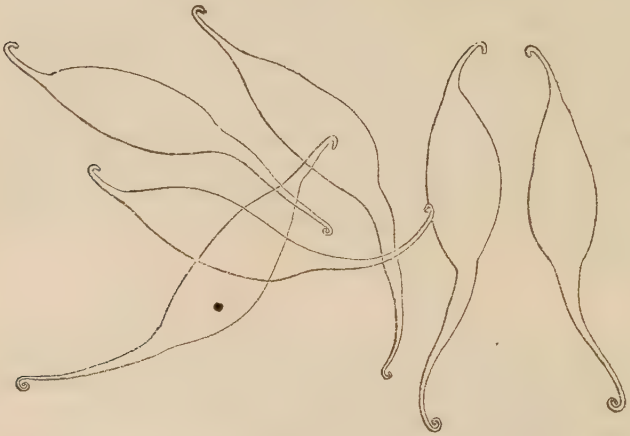
In July last, while engaged in the microscopical examination of the tissues of the eye of the common turtle, I discovered a large number of parasitic ova attached to all parts of the conjunctiva, with the exception of the modified portion of this membrane which extends across the cornea. The ova were equally numerous in both eyes. I repeated the examination, and, in five consecutive instances, met with these cystic bodies, in the same situation, in the two eyes of each of the turtles. In a sixth specimen, however, the ova were entirely wanting.

The turtles were *lively* at their death, which was of a sudden and violent character, and took place in the city. I could discover no epizoon on any part of their heads which were sent to me.

With such fixedness are the ova adherent to the conjunctiva, that not even roughly scraping off the thick, slimy, secretion, which covers this tunic, detaches them. I detected them once, within a few hours after the death of the animal they infest, and, in this instance, found them present in large numbers, on the eyes of a turtle weighing upwards of a hundred pounds. As I have already stated, they were seen on all parts of the palpebral and sclerotic, but not on the corneal conjunctiva.

So minute are these bodies, that they are undistinguishable to the naked eye.

Subjoined is a magnified view of them, in a group, as shown under the microscope, and drawn by the aid of the camera lucida:



Form.—Elongated, unequally ovate; at each extremity, the body is prolonged into an infundibuliform appendage, one of which is about a third of the length of the long diameter of the body, and terminates in a fine point, abruptly curved so as to constitute a short hook, whereby secure anchorage to the conjunctiva is effected; the other is larger and longer, nearly equalling in length the whole ovum, and ends also in a fine point; it is curved at the terminal part, so as to form a coil, which often presents one or two turns; this may be regarded as the suctorial portion. The body is a simple sac, entirely destitute of internal organs.

Size.—For the convenience merely of stating the following measurements, I may refer to the different parts of an ovum as *head*, *neck*, *body*, and *tail*. Some of the ova are rather smaller than others, but the annexed has reference to one of larger and more ordinary dimensions:—

	Inches.
Total length,	·0132
Length of neck,	·0054
" body,	·0056
" tail,	·0022
Breadth of head,	·00015
Neck a little below this,	·0001
" at origin from body,	·0005
Body at its widest part,	·0023
Tail at origin,	·0003

Colour.—The colour of all the ova is yellowish; or, perhaps, it may more correctly be said to be a light, ochreish-yellow; this tint pervades uniformly every part.

Consistence.—The chitinous shell-membrane appears to be tough and resistent; for when, in examination, an ovum has been irregularly compressed, it is thrown into large, and sharply-angled folds,—no fine wrinkling is to be observed.

Aggregation.—The ova are commonly found to be solitary, or in pairs; more rarely are they gregarious; but when in groups, there are five, eight, or sometimes ten, collected together.

In all the eyes examined, with the exception of those of the sixth turtle, I discovered *a second form of ovum*, not differing, however, in any material degree, from that already described.

The body is elongated, but not so swollen as in the preceding variety, though it is still unequally ovate. The shorter filament, which terminates one extremity, is less regularly infundibuliform; its thinnest portion is rather suddenly bent at an acute or right angle to the body, and ends in two hooks, joined by their convexities. From the opposite portion of the body the suctorial filament passes, and is, relatively to the corresponding part in the first-mentioned ova, longer, and more thread-like; slightly funnel-shaped at its commencement, it soon contracts, and, after a more or less flexuous course, ends by a rather sudden expansion into a flattened disc.

These ova are exceedingly few in number, and are generally smaller than those first described; they are, for the most part, found solitary: I presume them to be the same as those previously mentioned, only in an earlier stage of development.

Dr. Spencer Cobbold has obligingly examined my specimens, and I am indebted to him for the favour of the following communication:—"After a careful examination, I have arrived at the conclusion that the foreign cystic bodies adherent to the conjunctiva, are the ova of an ectozoon, the latter being parasitic, either upon the turtle itself, or upon some crustaceous epizoon likewise infesting the turtle.

"These ova differ in appearance from any I have hitherto

encountered, and are especially interesting in the circumstance of their presenting filamentary appendages at both ends. The hook-like filament is, probably, distinctive of the *species* of parasite to which the ova may be referred.

"The eggs of various forms of entozoa, and also in the allied ectozoa, display filamentary appendages at both ends of the chitinous shell-capsules; these processes generally resembling each other, as may be seen, e. g. in *Monostoma verrucosum* infesting the fox; in *Tænia cyathiformis* belonging to the swallow, and in *Tænia variabilis* of the gambet. In some cases, where the filaments are shorter, the eggs more closely resemble those to which you have directed my attention. This is evident in the ova of a curious trematode—*Octobothrium lanceolatum*—attached to the gills of the common herring, and likewise in the eggs of the still more eccentric-looking parasite—*Polystoma appendiculata*—found on the branchiæ of various marine fishes.

"In all probability, the entozoon from which the ova you have found proceed, is closely allied to those forms of trematode, or fluke-worm parasites whose eggs display only one thread-like appendage, or 'holdfast.' For example, the eggs of different species of *dactylogyrus* infesting the gills of the pike exhibit ova of this kind (a good representation of this is given by Guido Wagener in 'Siebold and Kölliker's Zeitschrift,' vol. ix. Plate v., fig. 8.) The eggs of *Diplozoon paradoxum* are also especially worthy of notice, as from G. Wagener's recent Prize Essay ('Beitrage zur Entwicklungsgeschichte der Eingeweidewürmer'), it would appear that the single filament is liable to vary in length; whilst (as Van Beneden, Dujardin, and other observers have shown,) the end of the filament is ordinarily coiled upon itself in a manner precisely analogous to that noticeable in the ova from the eye of the turtle.

"On the whole, therefore, I think we may safely conclude that the ova under consideration are referable to a parasite more or less allied to the well-known *Diplozoon paradoxum* of Nordman; and I have little doubt that—if not already known to some Continental helminthologist—we shall, ere long, discover them in the oviducts of some species of *Polystoma*, *Tristoma*, *Octobothrium*, *Dactylogyrus*, or other allied genus of trematode worm."

Art. XII.—*Five Cases of Neurotomy for Painful Affections of the Limbs.* By Redfern Davies, Surgeon to the Birmingham Workhouse Infirmary.

Case I.—*Past history.*—William Whitelaw, aged 54, formerly a soldier, and afterwards a labourer, in May, 1856, whilst at work upon the roof of a house, fell to the ground, a distance of some forty feet. He was immediately conveyed to an hospital, where he was found to have sustained a compound fracture of the middle-third of the tibia, and lower-third of the fibula, the bones, to use his own expression, "sticking out."

He remained in the hospital about five months, when, his limb being to all appearance sound, he was discharged.

Notwithstanding, however, the apparent soundness of the leg, he was tortured with a similar pain to that he now complains of, and which had been coming on during the healing of the fracture. He has since been an inmate of several institutions, receiving but temporary relief. The wound at the fibula has twice opened, small portions of bone coming away.

Present state.—November 20, 1857. Upon examination, I found him to complain of a pain which commenced in the toes on their dorsal surface, extending over the foot, anterior surface of ankle, and leg, as high as the original site of the tibial fracture. The pain here stopped, but was again felt in a line running transversely from the last-named spot to the interval between the fibula and the edge of the gastrocnemius; thence it descended to the outer ankle and outside of the foot, joining with the pain on the dorsum. The pain was described as being constantly present, worse at times, and of a gnawing character; it was increased to intolerable agony upon moving the limb, or touching any portion of the surface included within the affected area. Upon jolting the heel, or bending the toes, a feeling like "pins and needles," but of a very extreme painfulness, is experienced. This, however, only reaches as high as the fracture of the tibia. When the limb is embraced with both his hands, thus making firm pressure with the thumbs over the first intermuscular space on the anterior surface *above* the seat of the fracture, the pain situated over the dorsum of foot and front of leg becomes very much diminished; but that between the fibula and tendo Achillis, &c., remains unaffected. The limb is shrunken and flabby; the foot directed downwards; and the toes flexed and cold, and destitute of feeling; the axis of the limb is quite natural, and the bones in good apposition, with no undue amount of ossific deposit around their ends; the integument around the site

of the fracture reddened, depressed, and adherent to the bone; the ankle-joint is uncompromised; he denies syphilis, and there is no evidence of any other disease.

Diagnosis.—That a portion of the anterior tibial and musculo-cutaneous nerves were implicated by the fracture of the tibia, and its subsequent union. This would account for the pain on the dorsum of the foot and the anterior surface of the leg; and by reason of the communication between the communicans peronei and the external saphena nerve, so was the pain sympathetically experienced in the interspace between the fibula and tendo Achillis, and in the outer part of the ankle and foot.

Operation.—November, 1857. In the presence of many of my professional friends, Mr. Jauncey giving chloroform, I made an incision two inches long over the axis of the external popliteal nerve in the popliteal space, taking the inner border of the biceps tendon as a guide. The fascia being exposed, and a portion of it pinched up by forceps, it was divided on a grooved sound; by gently separating the areolar surface, the nerve readily came into view, and an inch of it was cut out. The edges of the wound were then brought together by suture. Directly upon recovering from the effects of the chloroform, he declared that the old pain was gone, and he could bear to have the limb jolted. For the three succeeding months, during which time he was under my observation, he steadily progressed; and the following is the report entered on the minutes of the Medico-Chirurgical Society of Birmingham, to whom I had the honour of presenting him, at the end of the above time:—

"The limb, when in a state of rest, has the toes drawn downwards, the foot turned inwards, and the heel raised. All power of extension is completely gone; sensation is less acute than on the opposite side, but it is gradually improving; he also perceives himself that the dorsum of the foot and anterior surface of the leg are much colder than the posterior and plantar surfaces; and to the thermometer there is a difference of four degrees in the temperature of the parts above and below the division of the nerve; a similar difference exists, likewise, between the temperature of the two legs.

"Since the operation, there has been no return of pain; and he has this day (February, 1858), walked, with the aid of a slightly-raised heel to his shoe, a distance of six miles, in perfect ease and comfort."

Case II.—*Past history.*—James Albert, aged 67, a locksmith. Three years ago he fell off a ladder, striking his right

thigh upon a rail; upon examination at an hospital the bone was found to be fractured at its middle-third. He was treated by Liston's long splint, and remained in bed for twelve weeks, when the bones had firmly united, with about one inch of shortening, and the condition of the limb was precisely as now.

Present state, October 1st, 1858.—He states that ever since the occurrence of the fracture he has been unable to put his foot to the ground, or bear any weight upon it, in consequence of the so doing being attended with such great pain; he is thus incapacitated from getting about, save on crutches; and the pain, though constant, is less when in bed. Upon examining the limb, the original site of fracture is easily recognised; but there is no deformity, save the shortening before alluded to, and the axis of the limb is natural. The ankle-joint is free, but its movements are attended with very great pain. The foot points downwards, the toes flexed, and to all appearance immovably fixed, any attempt to stir them causing great agony. The muscles on the posterior surface of the leg were very hard, rigid, and a good deal atrophied; the temperature of the limb was much colder, both to the feelings of the patient and to the thermometer,—a difference of five degrees being given by the instrument, as compared with the opposite extremity; and he said it always felt "clammy."

For the purpose of further eliciting the condition and nature of the injury, I placed him under the influence of chloroform, and insensibility was produced; the toes resumed their normal position, and became freely movable; and likewise the muscles of the calf were soft—in short, the leg was natural.

As the effects of the chloroform went off, and consciousness returned, so did his limb resume its usual condition. A few days after, I visited him in his ward at night, when he was fast asleep; and, having gently uncovered his leg, I found the foot and toes in their natural state, and freely movable, till I awoke him, when they instantly became flexed and rigid. The last and most conclusive experiment that I instituted upon him was as follows:—

On October 8, 1858, by means of a conical bag containing a freezing mixture (having carefully protected the adjacent parts), I endeavoured to freeze the site of the posterior tibial nerve in its lower-third.

During the process, he complained of the usual pain attendant upon such applications; but was surprised to observe his toes gradually resume their natural condition, and that he could bear to have them handled without pain. Upon the withdrawal of the freezing mixture, they became speedily flexed, &c.

Operation.—Guided by these indications, I determined to excise a portion of the posterior tibial nerve; and on October 12, 1858, with the aid of my friend, Mr. Benjamin Hunt, I cut down to the nerve in the lower-third of the leg, a little above where it passes through the annular ligament, after the usual manner adopted for the ligature of the artery in that position,—cutting, of course, a little to the side of it: the nerve was easily exposed, neither the artery nor vein being seen.

Before the nerve was divided, he was allowed to recover partially from the chloroform, in order that the immediate effects of the section might be seen; when the toes became normal in direction, and could be moved freely without any pain; he could press, flat-footed, against the wall, and even desired to walk from the operating table.

About one inch of the nerve was removed—metallic sutures and water-dressing applied to the wound. Shortly after being put to bed, he mentioned to a companion in the ward the increased amount of warmth he felt in his leg; and at night the thermometer showed no difference in the temperature of the two.

The history of the case up to the present time (October, 1860) is, that he progressed favourably, the wound healing well; and he can now, aided by a high-heeled shoe—the necessity for which results only from the shortening of the limb, in consequence of the fracture—walk about, and work, standing at a vice, some nine hours a day, feeling no more inconvenience from one leg than the other.

CASE III.—*Past history.*—Hannah Eyre, aged 50, in May, 1858, received, in a brawl, a wound from a knife just below the pisiform bone. The wound healed speedily and well; but there has ever since existed, upon the slightest touch over the ring or little finger, or from any jar of the fore-arm, a most intense pain coursing up from those fingers to the shoulder. She has been unable, likewise, to make use of the other fingers, fearing lest she might touch those affected. Her arm was consequently useless, and carried in a sling. Both during sleep, and when awake, she had frequent and very painful twitchings in the fingers, and pains darting up the arm.

Present state.—December 13, 1858. Upon examining the hand, all the fingers are carried semiflexed; they could not be moved without causing much suffering to the ring and little fingers, which were cold and clammy to the touch. A normal cicatrix below the pisiform bone was seen, presenting no appearance worthy of note.

Operation.—December 14. An incision over the track of

the ulnar nerve was made above the pisiform bone, and half an inch of the nerve removed. She was not under chloroform; and, immediately the nerve was divided, her fingers were roughly handled, and she could firmly grasp anything without any sensation of pain.

She stated that, upon the section of the nerve being completed, she felt "a glow of heat run into the fingers;" and I could perceive them to be decidedly warmer than before the operation.

The result was, as examined by Dr. James Walker, of Peterborough, and subsequently by Dr. Augustus Waller (Professor of Physiology), a few months ago, that a complete immunity from pain was afforded. She was able to use both her arm and fingers as before in all the operations of life; and, in short, the only difference which existed in the limb, as compared to the time before the accident, is, that she cannot so well appreciate slight differences in textures from touch only, or pick up a *crumb* of bread or a *hair* from off the table as readily as before.

Case IV.—*Past history.*—George Stephens, aged 59, a labourer, received an injury to the left wrist-joint from a fall of timber, in 1845. For five years he continued off and on under treatment, and in 1850 his fore-arm was removed (by Mr. Thomas Harding, of Stourbridge) at the upper-third. He went on very favourably for three weeks. In endeavouring to remove the last ligature, owing to the patient starting, it was suddenly twitched away. Instantly there ensued a pain in the middle of the stump. This pain gradually increased, and became constantly present. To his feelings, it was as though something was "working" at the end of the stump, and "like a live thing endeavouring to get out." He had, likewise, sensations as of his fingers being forcibly "ground together." Any movement, especially rotation of the limb, was attended by a feeling as though his fingers were being stretched. The end of the stump was very tender when touched, and he could not even bear the slightest pressure upon its surface; it appearing to him as if there was a "handful of pain." In rainy or cold weather these pains were increased.

In 1852, a tenotomy knife introduced beneath the surface of the stump completely separated it from the textures below. In 1853, a tumour was removed from the end of the stump; and in 1857, the tumour, being reproduced, was again removed. Each of these operations was followed by an improvement both in the condition and feelings of the patient: and after each, he for a time thought himself cured. This improvement

lasted, however, only for a time, and in the course of six months the old pains had returned with their usual force.

In June, 1859, he came under my care; and, though by no means sanguine as to the result, I operated on him. His condition and symptoms were precisely the same as above; and the pains in the fingers were not confined to any one in particular, but he could feel distinctly all and each.

Operation.—With the help of my friend Dr. Thomas Walker, of Peterborough, about half an inch was removed from the musculo-spiral nerve, by making an incision over its course in the upper-arm, between the brachialis anticus muscle and the supinator longus, from the ulnar nerve, by cutting down upon it behind the inner condyle, and from the median, by exposing it in the middle of the upper-arm. The result was, that for a time he was very much better; and he could use his arm freely, and without pain,—the motions, &c., of the stump not being in any way interfered with by the removal of the nerves.

July, 1860. This, however, continued only for a brief space, the old symptoms gradually returning, and he is now in precisely *statu quo*.

Case V.—*Past history*.—John Stephens, aged 32, by occupation a sailor on board a man-of-war, was admitted into the Workhouse Infirmary, May, 1860. He stated that he had enjoyed perfect health up to six years back, when, off the coast of Sierra Leone, he, with thirteen other men, were taken with yellow fever (of these, nine died, and one was sent home with a similar affection to that he complains of in his left arm). After lying six months ill with fever, and afterwards dysentery, he came home. In 1857 he again went to sea, in a merchant vessel, having been rendered unfit for the royal service from the toes commencing to contract slightly, and feeling pain in them. He remained in the merchant service up to midsummer, 1859, when the pains and contractions in his feet rendered him unable to continue.

Present state.—May 12, 1860. He complains of a pain situated on both sides of the big toe (of the left leg), and contiguous side of the next. This pain runs along the dorsum of the foot, and anterior part of the leg, nearly as high as the tubercle of the tibia. Firm constriction above by grasping with the hands, and making pressure with the thumbs, relieves this pain. He has also pain extending all over the plantar surface of the foot and heel, and running between the internal maleolus and heel, up to the posterior surface of the leg, till it was gradually lost in the popliteal space. This pain was described as "like the shock of a galvanic battery," attacking him suddenly, and

continuing from one hour to twelve, leaving him faint with torture. There was also a constant pain as of pins and needles in these parts, which had very much increased during the past few months, so as to render him unable to bear any weight upon the foot; and any movement of the toes instantly generated pain like a galvanic battery. The foot felt cold and clammy, the muscles of the leg wasted and irritable, &c. The heel was raised some two inches from the ground; the inner edge of the foot drawn upwards, and the anterior two-thirds of the foot twisted inwards, so that he walked on the outer edge. The toes, especially the big one, were very much contracted and rigid.

Operation.—Pain being the most prominent and severe symptom, I determined to attack that first; and so, on May 12, I divided the anterior tibial nerve in the lower-third of the leg, removing about three-fourths of an inch,—the result being a total removal of the previous feelings in the big toe and anterior portion of the leg.

Allowing two weeks' interval to see the success of this step, I then divided the posterior tibial, which was followed with complete removal of pain—the patient, on leaving the operating table, could strike his foot on the ground, and walk with perfect ease. The deformity, of course, remained. This, however, has been remedied by dividing the tendo-Achillis, tibialis anticus and posticus muscles, and plantar fascia, and treatment with Scarpa's shoe; so that now his foot is restored to its natural position, and the limb is a useful member.

I should mention that the nerves were examined by Dr. Waller, who was present at the operation, but no microscopical or other changes were observed in their structure. During the operation, Dr. Waller applied a very fine thermometer to the limb, and found, almost immediately after the division of the nerve, an increase of temperature to the amount of three degrees.

Art. XIII.—*Some Remarks on a Peculiar Affection of the Knee-Joint.* By Francis James Lynch, M. D., Physician to the Loughrea Workhouse, and Fever Hospital.

Mr. Mayo, in the eleventh volume of the Medico-Chirurgical Transactions of London, directed the attention of the profession to a form of disease in the knee-joint, termed by him "An acute form of ulceration of the cartilages of the joints;"

and, subsequently, in his work on Human Pathology, p. 90, he further alludes to it, under the heading of "A class of cases of rare occurrence." Sir Benjamin Brodie, Mr. Hawkins, Mr. Key, Mr. Wickham, and others, have since published remarks on the subject; and most surgeons in Great Britain and Ireland in extensive practice are, doubtless, familiar with the disease, and its appropriate treatment; still, as it is rather a rare form of disease, the following observations and cases may not be wholly devoid of interest.

The disease is mostly observed in persons who have been subject to rheumatism, or to rheumatic gout, and is often brought on by exposure to damp and cold; the patient, after suffering from more or less acute synovial rheumatism of a migratory character, in the wrist, elbows, knees, and other joints, will suddenly complain of intense pain in one knee, where the inflammatory action seems to concentrate itself. The limb is almost always in the extended posture, the heel resting on the bed. The swelling, even at the commencement, is considerable, occupying the knee, the lower-third of the thigh, and the upper-third of the leg; it is not circumscribed above or below, but gradually tapers away, and is lost in the thigh and leg. The skin covering the affected part of the limb has a remarkably glossy, bloodless hue, resembling in colour white marble. It is exquisitely tender to the touch, and the swelling is found to be uniform, firm, and elastic; sometimes a crackling is felt under the examining finger, and at times slight œdema, or pitting on pressure, exists. The joint is the seat of constant pain; sometimes dull and throbbing, at other times lancinating and severe, with frequent and intensely painful exacerbations. The tenderness is very great, even in the skin, and the least pressure cannot be borne. Moving the toes, or shaking the bed, or walking heavily across the room,—in fact, whatever occasions the slightest disturbance or movement of the limb,—causes intense agony. There does not seem to be much, if any, effusion into the joint; and the usual prominences about it cannot be easily detected, owing to the thickened condition of the soft parts, and the extreme sensitiveness of the skin. Frequent spasmodic twitches in the limb increase the patient's sufferings, and interrupt the snatches of sleep, which anodynes, or exhausted nature, at times induce. From the commencement, there is a good deal of febrile excitement; nausea, anorexia, thirst, disturbed rest, quick pulse, heat of skin, and other marks of constitutional derangement, exist; the countenance is expressive of much pain and anxiety, and, as the disease progresses, emaciation, increasing debility, per-

spirations, and frequently recurring rigors, are observed. In this condition things may remain for weeks or months, when, in the majority of cases, either from the effects of remedies, or, in rarer cases, from apparently the unaided efforts of nature, the urgent local and constitutional symptoms gradually or abruptly abate, and the patient ultimately recovers, with the joint apparently anchylosed; but in process of time a limited degree of motion sometimes returns, only to a slight amount. Ultimately, however, after a year or two, the patient is able to walk without much lameness. The swelling never completely subsides; the patella is more or less fixed; the hollows on either side of the ligamentum patellæ are permanently filled up, not from effusion into the joint, but from thickening of the exterior tissues.

Owing to the limb resting for such a length of time in the extended posture, troublesome sores and excoriations are apt to form on the heel and nates; for months after the subsidence of the acute symptoms the patient is unable to rest on the limb, and its premature use will surely reproduce the original symptoms. Occasionally, during the acute stages of the disease, a degree of tenderness and some fulness is felt in the course of the femoral vessels as high as the groin, where an enlarged gland can be sometimes felt; showing that, in some instances, the venous and absorbent vessels participate in the existing inflammatory action. Such is the progress and termination of the disease, in its milder and most favourable forms; its leading features being well summed up by Mr. Hawkins, in the following extract from one of his clinical lectures on the subject, viz.:—"1st. Very acute tenderness of the skin, resembling, in this respect, hysterical affections of the knee. 2ndly. Great aggravation of pain on moving the limb, or the bed on which they lie. 3rdly. A pale, white, glossy appearance of the skin. 4thly. The swelling is peculiar, differing from that of simple synovial inflammation; for, while the swelling in the latter extends around the joint alone, in this disease it extends around the lower part of the thigh, and the upper part of the leg; it pits on pressure, and you can feel a sensation of crackling beneath the finger." Mr. Hawkins believes that the disease commences in the periosteum covering the lower end of the femur; and that after involving the areolar membrane external to the capsule, it passes thence to the synovial membrane and cartilages of the joint. At all events, it is probable that the inflammation originates in the areolar and fibrous tissues external to the joint. If, as occasionally happens, the disease is supposed to be rheumatic gout, or common synovial rheumatism, and is

treated by colchicum, and afterwards by hydriodate of potash, the patient will suffer for months from the violence of the pain, and the attending irritative fever, escaping ultimately with a joint more or less completely anchylosed, or the cartilages and synovial membrane of the joint become ulcerated and disorganized; and matter forms in and around the joint, running down the patient's strength, and either ending fatally, or rendering amputation of the limb necessary for the preservation of life. In the vast majority of cases, however, there is no tendency to the formation of matter within or around the joint; the cartilages are absorbed; and false anchylosis, without any accompanying suppuration, is established. If the disease be early recognized, rapid mercurialization of the system, and local depletion, will quickly restore the joint to its normal condition; even at a more advanced period, the same line of treatment will, in the vast majority of cases, arrest further mischief, and relieve in a very marked and satisfactory manner the local and constitutional symptoms, which begin abruptly to disappear as soon as the mercurial action is established. The painful condition of the limb pending the mercurialization of the system is often remarkably relieved by local sedative applications, amongst the most potent of which is a lotion of cyanide of potassium dissolved in water (4 grains to the ounce), applied tepid. In general, warm applications are preferred to cold; and French wadding, or carded wool, around the joint and limb, with a pad under the heel, will be grateful, and useful. Generally speaking, counter-irritation, by blisters or otherwise, does more harm than good, even on the decline of the disease. When the acute symptoms have wholly subsided, and the patient is able to rest a little on the limb, the Buxton waters, and a judicious course of shampooing, tend powerfully to restore a certain degree of motion to the joint. During convalescence, there are sometimes returns of severe pain, which are best relieved by the cyanide of potassium lotion, or by belladonna—two drachms of the extract in an ounce of water, smeared over the seat of pain.

In the acute stage, the stomach is so much disordered, that opium, in any shape, does more harm than good, when taken internally to relieve pain or produce sleep; but I have found Battley's sedative liquor to be, when a sedative is urgently required, the most preferable form, far more so than any of the preparations of morphia. During convalescence profuse perspirations are common; here the liquor cinchonæ, and eight grains of tannin, every night, will often check this exhausting symptom. A flannel bandage, using very moderate pressure,

from the toes upwards, is useful; but bandaging should not be attempted until *all* pain and tenderness cease. When the disease rapidly disorganizes the cartilages and other textures of the joint, or when a similar result follows a protracted attack, the case assumes the features of ordinary acute or sub-acute ulceration of the cartilages of the joint, and requires a similar treatment.

There is a well-known form of acute inflammation, which has been well described in this Journal by the late Mr. M'Dowel, attacking the periosteum, and articulating ends of the bones—in the vicinity of some of the larger joints, in certain states of the system, rapidly extending to the synovial membranes and cartilages of the contiguous articulations, and ending speedily in purulent effusion into and around the joint, absorption of the cartilages, necrosis of and separation of the epiphyses of the bones, thickening and separation of the periosteum, and other morbid changes, which is not to be confounded with the disease under consideration; such cases occur after parturition, or as a sequel to scarlatina, erisypelas, small pox, typhus fever, or what has been termed diffuse inflammation. Their course is rapid: several articulations are attacked in succession; a blush of redness, sometimes faint, sometimes vivid, is observed on the surface; the febrile disturbance quickly assumes the typhoid, rather than the irritative character; and mercury, and all other modes of treatment, are mostly useless.

The following cases, illustrative of the above remarks, are extracted from various papers on the subject, and a few of them have occurred in my own practice. The disease may, doubtless, affect other joints, but I have only seen it in the knee; and it cannot be very common, as, in twenty-five years' extensive experience, I have only met with three or four instances of it.

A married female, aged 40, after suffering from an attack apparently of rheumatic gout, flying about from one joint to another for several weeks, was suddenly seized with violent pain in the right knee-joint, accompanied by swelling and great tenderness. Her medical attendant in vain pressed the mercurial treatment, it would not be listened to, and the lady continued to suffer severely for some weeks. Colchicum, hydriodate of potash, and local depletion, having been had recourse to without any advantage, I found her, about the third week of the disease, in the following condition:—The knee was much swollen, the swelling being greatest at the joint, and tapering upwards as far as the middle-third of the thigh,

and downwards to the calf of the leg. The integuments are of a pale glossy white colour, without a trace of redness; exquisitely tender to the touch, particularly over the joint; and rather hot. There is a severe throbbing pain in the joint, chiefly felt at its inside, and much increased by the slightest motion of the limb, or by walking heavily across the floor; occasionally, violent pain of a lancinating character darts across the joint. The swelling is elastic, free from any enlarged veins, and does not pit on pressure. A good deal of tenderness exists along the femoral vessels, to the groin, where a few enlarged and tender glands can be felt. The natural projections and depressions around the joint are obliterated, but apparently more from effusion outside than within the joint. The limb lies in the extended posture, and the patient dreads the slightest movement of it, or of the adjoining portion of the bed. The heel is very painful, owing to the motionless condition of the limb. There are frequent spasmodic twitches in the muscles; and the entire limb feels hot, but seems cold to the patient, so as to oblige her to keep it wrapped up in flannel and carded wool. There is great uneasiness in the popliteal region —a feeling of distention there, as if the skin would burst. There was total want of appetite; great thirst; evening exacerbations, characterized by heat of hands, flushing of face, and increased heat of skin. She had chills every day, and perspired copiously at night; the pulse was 100; she had got very thin; slept very badly; and often suffered from nausea and vomiting. Pressure along the surface of the tibia, and over the femur, where it is most superficial, caused great suffering. The countenance was expressive of much anxiety; and bedsores were beginning to form.

Fomentations and leeches gave temporary relief; opium, in any shape, could not be borne; three grains of blue pill were given every four hours; the bowels were attended to; and a lotion composed of sixteen grains of cyanide of potassium and four ounces of distilled water applied tepid, whenever the pain becomes severe.

During the next five or six days, there was but little change in the patient's condition; but extraordinary relief to the pain followed each application of the lotion—she called it the magical bottle.

On the seventh day moderate ptyalism set in, and was followed by complete relief to the pain, and speedy subsidence of the constitutional disturbance.

A long period, however, elapsed before the patient could leave her bed. Blisters, to accelerate convalescence, did no

good; and a very cautious application of pressure and support, by means of suitable padded splints and bandages, after the acute symptoms had long completely disappeared, could not be endured. Later still, a journey to Buxton was with difficulty accomplished. Considerable advantage was derived from the use of the waters; but more particularly from a well-directed course of shampooing.

Three years, however, after the first onset of the attack, and notwithstanding the most careful attention, the motions of the joint were very imperfectly executed; and, although the lady walked without a stick or support, the knee could be only very slightly flexed, and the patella was only very partially movable

Jane Williams was admitted into the Loughrea Union workhouse, on the 10th of June, 1856. On admission, the right knee was very much swollen, exquisitely tender to the touch, of a pale glossy hue; the swelling being greatest at the joint, and extending upwards and downwards for some inches, gradually diminishing, until it was ultimately lost in the thigh and upper-third of the leg. The skin over the seat of the swelling was perfectly colourless, and presented an appearance very similar to what is observed in phlegmasia dolens. There was no œdema, the swollen parts being rather springy and elastic. The shape of the joint was completely lost, the usual depressions and prominences being obliterated. The patient lay on her back, with the limb in the extended posture, and could not endure the slightest change of position either of the limb or body; there were occasional sharp pains darting through the limb and joint; and a dull constant feeling of uneasiness, more than pain, was felt in it. The sleep was much disturbed by painful startings of the limb; towards morning, profuse perspirations occurred, and at several periods during the day alternate chills and flushes of heat were perceptible. The pulse was 120, and weak; the countenance anxious and depressed; the appetite wretched; much emaciation and debility existed; there were thirst, despondency, occasional nausea, and rejection of food. The patient was a strong, middle-aged woman, who had several attacks of migratory, but not severe, rheumatism. A month before admission she caught cold, and was seized with violent pain, accompanied by swelling of several joints in succession. After struggling for a month against the disease, without medical assistance, the pains left the other joints, and the right knee became suddenly swollen, and the seat of acute pain.

Two grains of calomel, with one-fourth of a grain of opium,

given three times a day, produced ptyalism in six days, when all painful feelings in the joint and limb completely and suddenly ceased; but a considerable degree of tenderness existed for months, and several weeks elapsed before the limb could be put to the ground. After some months, strapping the limb with plaster of gum-ammoniac with mercury, spread on leather, seemed to give much relief and support to the limb, coupled with a well-adjusted bandage. A moxa, and afterwards a caustic issue, were tried without advantage; but ultimately she acquired considerable use of the limb, so as to be able to walk without much lameness, and without support. But after an interval of four years, when I again saw the patient, the joint was imperfectly anchylosed, little motion existed, and the patella was only partially movable.

As I have already mentioned, the disease generally terminates, in its milder forms, by a gradual disappearance of all the symptoms; more frequently, anchylosis, to a greater or less extent, results; in other instances ulceration of the cartilages of the joint, without any formation of purulent matter, ensues, giving rise to febrile symptoms, first of an inflammatory, then of a typhoid character, which speedily run down the patient, and destroy life, even in cases where active and appropriate treatment has been employed from the onset. The following case illustrates this latter mode of termination.

A girl, aged 22, liable to rheumatism, and accustomed to vicissitudes of temperature, admitted, under Sir B. Brodie, into St. George's Hospital, in June, 1827, after labouring under rheumatic pain in the elbows and shoulders for a month, was suddenly seized with exquisite pain in the right knee, increased on pressure, and aggravated by every motion of the joint. The pain was principally referred, not to the knee itself, but to the thigh-bone immediately above it. The swelling extended from the upper part of the thigh to the leg below the knee, being most conspicuous in the immediate neighbourhood of the knee-joint, and thence gradually diminishing, above and below, without any defined termination. The swelling was very considerable, glossy, tense, elastic, under-coloured, exquisitely tender to the touch, resembling in colour white marble; and both the pain and enormous swelling had occurred suddenly, the day before. There were quick pulse, hot skin, brown furred tongue, and a countenance expressive of anxiety and suffering.

Three weeks' treatment by leeches, salines, calomel, and opium, nearly removed all the symptoms, both local and con-

stitutional. Accidental exposure to cold, however, reproduced them; and, notwithstanding a repetition of the treatment which had been before successful, along with blisters, and the establishment of an issue, painful startings of the limb ensued, and other symptoms of the ulceration of the cartilages, which were rapidly undermining her strength, when an attack of peritonitis carried her off, in two months from the commencement of her illness.

On dissection, the cartilages investing the condyles of the femur, the head of the tibia, and the patella, were ulcerated, and the cancelli of the bones exposed beneath; the periosteum was easily separable from the bone for some distance up, and the bone itself was vascular. In this case it is probable that recovery would have taken place, without much, if any, injury to the joint, had not a relapse from imprudent exposure to cold taken place, as the treatment was prompt and apparently successful at first. I should mention, that not a particle of purulent matter was found within or around the joint, but some blood was effused into it. Although, in general, there is not much tendency to the formation of purulent matter in the milder forms of this disease, many cases are recorded of its running a much more rapid and destructive course, disorganizing the joint, and occasioning extensive purulent depositions in the joint and limb, either amongst the muscles, or between the periosteum and bone, or in all three situations. Thus, in a case adverted to by Mr. Hawkins in the 12th volume of the Medical Gazette, and in which the symptoms were exactly similar to the last case, as regards the local symptoms and constitutional disturbance, the patient gradually sank, after much suffering; and, on dissection, the cartilages were found to be extensively ulcerated; there was no purulent matter within the joint, although a good deal of matter was found, nearly the whole length of the thigh, among the muscles, near the bone. The periosteum of the femur was much thickened and condensed for some distance above the knee, and the bone was vascular. In another instance of this severe form of the disease, narrated in the 24th volume of Johnson's Medico-Chirurgical Review, p. 23, the patient died in a typhoid condition; and, on dissection, the principal seat of the disease was found to be in the periosteum and areolar membrane immediately exterior to it; the former was stripped from the femur throughout its lower-half, and was lying loosened and dead in the midst of pus; the articular cartilages were ulcerated; the joint contained pus, which communicated, by an ulcerated opening through the synovial capsule, with matter on the exterior of

the joint. In the following case, extracted from Mayo's work on Pathological Anatomy, the disease ended favourably in anchylosis, apparently uninfluenced by treatment:—A young woman, twenty-seven years of age, six months after labour, was seized with pain and swelling of the wrist; the next day, the right knee was attacked in like manner. The following day, the pain and swelling left the joint first affected, and attacked and settled in the left knee. Six weeks after the commencement of her illness, Mr. Mayo saw the patient. The thigh and leg were swollen, with serum effused into the areolar membrane; the joint contained no fluid; the pain in the knee was very acute and constant, and increased by the least motion; the patient lay on her back, with the knee straightened; leeching gave no relief; cold applications and fomentations were equally inefficacious; repeated blistering appeared at one time to be of service; small doses of calomel and opium were administered frequently during a few successive days, with no advantage; at length the pain seemed to abate spontaneously; the swollen state of the limb gradually subsided; the patient recovered the appearance of health, but the joint was wholly immovable.

Mr. Syme, in the number of the Lancet for April 19th, 1856, p. 437, makes some remarks on a form of articular disease which has some points of resemblance with the affection I have attempted to illustrate. Professor Syme's description is as follows:—The disease is generally met with in rheumatic subjects, and, after shifting from one place to another, fixes itself in the affected joint. In other cases it appears suddenly, and as a sequel of some feverish disturbance; it is hardly ever met with in the ball-and-socket-joints, preferring the hinge-joint articulations.

The symptoms are, severe, deep-seated pain, aggravated by pressure or motion, with exacerbations at night, and on the approach of rainy weather; diminution or complete loss of muscular power, with uneasiness in the limb generally, or in the nearest joint. Numbness, or want of proper sensation; more or less swelling, of an unyielding kind, confined to the seat of the articulation: it ends, after weeks or months, in recovery, with more or less stiffness in the joint, or in suppuration and ulceration of the cartilages. When the joint is examined at an early period, the cartilages are found eroded, with a little bloody fluid in the cavity of the joint. Internal medicines, the usual local remedies, such as fomentations, poultices, leeches, blisters, and issues, are useless; but the application of the actual cautery, used while the patient is under the influence

of chloroform, is said to be wonderfully efficacious. The disease which Mr. Syme describes seems to be confined to the synovial membrane and cartilages of the joint, and to be unaccompanied by any diseased condition of the periosteum, or of the bone, in the immediate vicinity of the articulation.

Art. XIV.—*Cases of Tertiary Syphilis; with Observations.* By Thomas Reade, M. B., and L. R. C. S. I., Belfast.

1. FATAL CASES OF SYPHILITIC MENINGITIS.
2. PROTRACTED TERTIARY SYPHILIS.
3. SPINAL SYPHILITIC MENINGITIS.
4. TERTIARY SYPHILIS, COMPLICATED WITH QUOTIDIAN AGUE.

I resume the subject of cerebral syphilitic disease, in order to submit my subsequent experience in this and other examples of disease emanating from syphilitic contamination, and as tending to exhibit the formidable character of the malady, when once engrafted on the human system, extending often to total subjection of the constitution, and a fatal termination.

Systematic writers have uniformly bestowed their labour and attention chiefly in the description and definition of primary ulcers, and the primary constitutional, or secondary forms of the disease, with the treatment,—though the rarer, but no less important, and more varied class of protracted and enduring diseases, called tertiary, has been more cursorily dealt with, though they are certainly more perplexing, from their complications, and affinities to other disorders of the human frame.

The late eminent and skilful physician, Dr. Todd, of King's College Hospital, London, and myself were, I believe, the first[a] who attempted to give a prominence and distinctness to this form of syphilitic disease, by calling attention of medical men to a very important diagnosis, and one on which, from the silence of the chief authors usually referred to for information, little or no guidance or instruction was afforded.

The statement of John Hunter, that the brain was exempt from syphilitic disease,—considering how much his authority and opinion influenced the minds of the first surgeons in the

[a] In the autumn before Dr. Todd published his Clinical Lectures on Syphilitic Disease of the Dura Mater, he paid me a visit in Belfast, on which occasion we fully discussed the subject. I told him I had offered, for publication, a paper on the disease, in the year 1847. We had the most perfect uniformity of views on its nature and treatment. An accidental meeting with Dr. Neligan, the present Editor of this Journal, gave publicity to my paper, in 1852.

empire for a long period,—seems to have blinded his followers, and shut out from them the perception of an important truth; for otherwise it would seem unaccountable how a form of disease, now so fully recognised and acknowledged, could have evaded the observation of men so able and so inquiring.

Or could there be a different solution and explanation of this omission by the writers, up to a certain period, of reference to this special form of tertiary disease? Can the change arising out of the introduction of the non-mercurial treatment of primary ulcers have produced a modification of the progress and course of the constitutional disease, when not eliminated from the system? Is it the consequence of the non-interference with the law which governs this disease in nature, uninterrupted by art? If such forms of development of tertiary symptoms did not appear during the general employment of mercury for primary and secondary consequences of venereal ulcers, then we could, doubtless, conclude that the non-mercurial treatment has revealed to our knowledge a more distinct and clear portraiture of the progress of the poison in the human system by universal contamination and death, and so assimilating the description of "lues venerea" more to that of Astruc than of John Hunter.

In support and confirmation of my own experience of the formidable and deplorable effects of syphilis in the human constitution, I would call the attention of those who have a limited practice in this class of diseases to the testimony of an army surgeon, who reports the result of the present management of this malady on the large scale of a military hospital.

"Regimental surgeons are well aware how often the finest men in their corps are affected with venereal disease,—how many such men have their constitutions so much impaired as to render them incapable of duty, either for a considerable time or permanently; and that a very large proportion of soldiers are annually discharged from the service, directly or indirectly, owing to the effects of syphilis." And he goes on to say, "I apprehend that statistics, deduced from documents at Chelsea, would afford very conclusive and startling corroborations as to the great cost incurred by the loss of the services of young soldiers, arising from syphilis; and cases in which the seeds of hereditary, and other forms of disease, have been brought into action by the taint of syphilis, would render the total of men discharged, directly and indirectly, from the effects of that malady, still more formidable." "And too often the unfortunate offspring suffer for the sins of their parents, in stunted growth, scrofula, and other constitutional affections."

This testimony of an army surgeon of experience offers no ground of congratulation on the success of medical science, or any proof that the treatment of syphilis, without mercury, is an advancement and an improvement on the treatment by mercury. On the contrary, it is an irresistible proof that constitutional disease abounds to a frightful degree at the present time; and certainly my recollection of the result of the former treatment of primary ulcers in private practice, by mercury, is, that it was not attended with this most unfortunate event on uncured patients, in anything like the proportion that latterly and now exists.

To a man who has had the misfortune to contract the primary ulcer from impure intercourse, it is to him a most momentous question, whether the best and most effectual means shall be adopted and used, to avert a constitutional disease, that may embitter all his future life, transmit disease and misery to his offspring, or even terminate his own existence by a death so repulsive to the mind to contemplate.

To take so gloomy a view of the subject of tertiary syphilis, I trust, may not be regarded in any way inconsistent with an impartial spirit of inquiry into the nature and treatment of this complex disease; but, by showing how often such unhappy cases may be submitted to one man in the course of a private practice (entirely distinct from a *speciality*[a]), and in most instances the nature and source of sufferings being imputed to causes, differing from the real one,—syphilis.

I shall report the cases in the following succession:—First, those cases which had a fatal termination; secondly, those which have been of remarkable tenacity and protraction; thirdly, those in which the spinal meninges were concerned; and, fourthly, a case of singular progress, distorted and masked by quotidian ague.

CASES OF FATAL TERMINATION.

Case I.[b]—Owing to the nature of his business, Mr. D. F was often detained from Belfast, for weeks at a time. In 1854, on one of these occasions, he was absent for six weeks, superintending workmen; while so employed, he was attacked by cranial pain, such as he had learned to combat and overcome, by the usual large doses of hydriodate of potash (twenty grains three times a day). He had no medicine with him,

[a] Speciality here means, no special character for a particular class of diseases, as eye, ear, chest, stomach, syphilis, &c.

[b] Dublin Quarterly Journal of Medical Science, February, 1852.

and persevered, notwithstanding his sufferings, till he had completed his object, and then returned to Belfast. Soon after his arrival at home, he was attacked with inability to move his lower limbs; he became delirious; his scalp was blistered; hydriodate of potash, which had so often subdued his suffering, failed, and I used mercury. After a long struggle, his intellect was restored, but his limbs remained permanently paralysed. He recovered so far as to be dressed, and lie on a sofa during the day, direct his business by personal communication; but, in about eight months, his vital powers succumbed, and he gradually sunk, a victim of constitutional syphilis. His life, I have no doubt, was cut short by his resolutely enduring his cranial suffering without interposing promptly with the appropriate treatment.

I regret I cannot perfect this case, by supplying a *post-mortem* examination[a]. I think I would not have been disappointed in my anticipations of finding extensive thickening of the dura mater, over the superior aspects of the cerebral hemispheres, and involving the arachnoid, the pia mater, and, probably, the subjacent cortical convolutions; and that the pons varolii and crura cerebris had equally suffered by extension from the disease of the dura mater at the base of the skull. This was the first case in which I made positive diagnosis of a *node* within the skull, in 1846,—although the case which guided me in this diagnosis I met with in 1838, and which I now publish.

Case II[b].—This case also had a fatal termination, but under a different progress of disease: no paralytic symptoms, or epileptic or cranial pains, recurred. With the outward semblance of vigorous bodily health, and for a long time an inordinate appetite, his mind underwent a gradual and progressive alteration. From being a man remarkably distinguished for good manners, great courtesy, and eminent social tact and address, belonging to the best class of society, amongst whom his company was constantly sought, he became morose, silent, and, when he did speak, apt to use offensive and coarse expressions; all this directly in contrast to his former character, and natural manner; he provoked to separation, or withdrew himself from his intimate and real friends, and latterly became solitary and desponding, lying in bed, without complaint of any disorder,

[a] *Vide* Todd on the Nervous System, Second Edition, *Post-Mortem*, pages 393 and 401.—*Medical Times and Gazette*, January, 1859.

[b] See Case III., Dublin Quarterly Journal of Medical Science, February, 1852.

till 4 o'clock in the afternoon. By accident, a servant entered his room at an earlier hour than usual (2 P. M.), when he was discovered in a state of insensibility. The medical gentlemen summoned to visit him, on the emergency, failed to restore sensibility, and he sunk comatose.

There was not any *post-mortem;* but, from the previous history of his case, when I reflect on the former class of symptoms,—at one time epileptic, at another in a state so apathetic and silent as to approach nearly to lethargy, followed by a short period of absolute mental derangement,—no doubt is left on my mind that the dura mater covering the superior convolutions of the cerebrum would have shown the chief morbific signification.

Case III.—In 1853, Dr. Joseph Bryson (now deceased,) brought me to visit the wife of a person in respectable circumstances, in Belfast. She was suffering from intense cranial pain, want of sleep, great debility, and loss of appetite; she was very anemic, and altogether presented an aspect of marked cachexia. Dr. Bryson informed me that she had received venereal infection, some years previously, from her husband; that the treatment for the primary sore had been ineffectual; secondary symptoms followed, and on these supervened a thorough constitutional contamination. He had treated her, accordingly, for various outward manifestations of tertiary syphilis. She bore many cicatrices of former rupia; had nodes on the tibiæ, with syphilitic swellings of several articulations. In a word, she was a victim of confirmed, and probably incurable, tertiary disease. Dr. Bryson had been treating her with the hydriodate of potash, from time to time, with the mitigation or arrest of symptoms. He was then using quinia and sedatives, at night, but without any decided relief. I recommended him to return to the exhibition of the hydriodate in 10 grain doses every sixth hour, and in the intermediate period to give full doses of iron. I saw her, with Dr. Bryson, again in about ten days, and found her greatly amended, in so much that I could scarcely have recognised her. I saw no more of this patient for about three years, when I met another physician in consultation. I then found that anasarca had complicated her anemic condition.

We agreed to send her to some friends, in a rural situation, where she would obtain fresh air, a full milk dietary, eggs, and fresh meat; for medicine, we principally relied on iron to amend her anemic state, and indirectly overcome the disposition to serous effusion.

I heard no more of her till I saw the announcement of her decease, assuredly the termination of syphilitic cachexia, about six months after the last interview.

Case IV.—September, 1846, I was sent for to visit a young officer in the barracks, who had recently returned from the Crimea. While engaged on a court martial, he was suddenly deprived of the power of speech, and at the same time suffered exquisite pain of the head. The staff-assistant surgeon, Dr. Buckley, had him immediately conveyed to his room, and placed in bed; but, feeling great difficulty as to the course of treatment he should adopt, refrained from active measures till settled in consultation. Dr. Buckley informed me, that this gentleman had told him (before this attack), when he consulted him, that he had been treated for a primary sore, by mercury, just before his regiment was ordered to the East. He soon exhibited secondary symptoms, sore throat, and eruption, in the East, when he was again treated with mercury. He then underwent all the hardships of the trenches—night-work, wet, bad food, cold, and misery. He suffered what were considered rheumatism pains in his joints; but the gallant youth never gave up his work till he had been wounded in the forehead by a glancing bullet at the memorable assault of the Redan (18th of June); he was sent home; the wound remained long open. Dr. Buckley pointed out to me the thickening of the periosteum of the internal malleolus, and of the shaft of the tibia. Dr. Buckley, at the time, was treating him with 5 gr. doses of hydriodate of potash. I had no hesitation in agreeing with him, that we had no justification for any depletory measures. The same medicine was continued, only given in 10 gr. doses every fourth hour, and a blister applied to the nape of the neck; beef-tea, and farinaceous food. The loss of speech was clearly depending on want of power to govern the mechanism of articulation.

Sunday (the next day), little change; but, if anything, better, though little sleep, and night restless, in pain. The doctor never left him all night. Continue treatment. Blister rose well; dress with mercurial ointment.

Monday—improved, can speak a little, in a very feeble voice. Continue treatment. Monday, 10 A. M.—Certainly better; can bear the admission of light into the room; blister discharging freely. Dr. Buckley sat up during the night, his attention has been unremitting.

Tuesday, 10 A. M.—Quite recovered, all pain of the head gone.

The officer had received leave of absence, to go to his friends

in England, and I gave him a letter of brief statement of the case to a surgeon of St. Thomas' Hospital. I did not see him again, but I may here copy the concluding paragraph of notes written at the time:—This young gentleman will, most likely, suffer a long period of syphilitic cachexia, before the constitution, aided by all the best powers of judgment and art, can restore it, if ever.

I conclude this case with the information, received while arranging my notes for publication, that this unfortunate young officer has just died.

CASES OF CONSTITUTIONAL SYPHILIS PROTRACTED THROUGH YEARS.

I find I must condense my notes of the following cases, by merely relating their salient points, restricting myself principally to the display of those symptoms which mark the invasion of the cranial contents, by the progress of the tertiary stage of the contamination of the fibrous membrane within the skull, spreading to the coverings and brain itself, comprising the functions of the nervous centres; and, if not arrested, causing irreparable injury, manifested in organic or structural demolition.

Case V.—I first examined this gentleman in 1844; he came to me with a sarcocele of one testicle. He had been treated for primary ulcer, and secondary symptoms. For years he showed no symptoms of manifest syphilitic indication; but the disease was latent, and he has suffered manifold invasions of cerebral disease, affecting mental power, vision, hearing, motion, and several times paralysis; and all have been, as yet, overcome by the early application and attention to treatment. In this case I am encouraged by the expectation that the poison is wearing out in the body, as, for a considerable period, the attacks have been less violent in character, and increasingly amenable to remedies, of which the hydriodate of potash is the principal.

Case VI.—I saw this case first with a cicatrised induration at the junction of the prepuce and glans penis; it was a perfect crescent, of cartilaginous firmness, and a sixth of an inch in thickness at its centre and upper part. He had papular eruption, and had been treated, in London, by the late Mr. Welbank; I treated the case with mercurial inunction, though confinement was with him impossible. All symptoms were removed—induration, eruption, in about two months, and treat-

ment ceased in three months. Two years after, he was leaving for a voyage to Greece, when he called on me with a recent infection, within four days of supposed contamination. I cauterized the sore with caustic potash most liberally. If cauterization could destroy, it was deeply and perfectly done. He was absent nearly one year; he had been treated abroad for an eruption; he became my patient again, with distinct tertiary eruption, and cranial pains. For nine years he has undergone repeated attacks, so repeated as to be almost unremitted,—the intermission of those much briefer than the illness. During this terrible and protracted disease, he has had the advice of Sir B. C. Brodie, Mr. Acton, Mr. Cusack, M. Ricord. It is needless to say they all acknowledged the disease; and we no way differed in treatment; all the preparations of iodine have had their turn; mercury, too; iron, quinia, cod-liver oil; we have possessed ample space, and verge enough, for all imaginable modes of treatment. The only means omitted, which I could never prevail on him to employ, was mercurial fumigation. When last I saw him, he was free from all disease, had married, and has, I am assured on sound authority, healthy progeny. Since the marriage he became my patient again, for phagadænic syphilitic ulceration twice, of a very extensive and serious character, attended with intense pain. He recovered well, however, and has since been free from disease[a].

Case VII.—I saw, in consultation with an excellent and specially well informed surgeon on venereal diseases, a gentleman, with a primary sore, within eight days from first appearance; it was being treated with a weak escharotic wash—its syphilitic character being doubtful. I considered it specific, and advised mercury internally; in a fortnight it healed. Within six weeks the same patient called on me to show me his throat, which was attacked with superficial ulceration. The patient, who is naturally of a very timid, nervous temperament, immediately after we saw him, went to Dublin, to obtain the opinion of a surgeon of high character and great experience. He opposed the mercurial treatment which I had advised, and, of course, saw his symptoms disappear under the palliative treatment. But in due course the tertiary symptoms made their

[a] In Dr. Todd's case of Begbie (Nervous Diseases, Second Edition), he refers to the question of the state of his progeny, as of particular interest. The question is here answered in confirmation of the attestation of M. Ricord,—that the tertiary disease is not infectious, or transferable, as secondary forms. There is another question of practical interest,—was it from the indurated or the cauterized sore the tertiary disease appeared? Ricord and Acton would affirm the former.

appearance—cranial pains; various organs, sense, motion, and mental power, have suffered in succession. The surgeons of London, Dublin, and Paris, alternately receive his visits; and he continues his wanderings from surgeon to surgeon, a miserable and disconsolate man.

As these three cases last related are fair, and by no means rare or exaggerated, examples of confirmed constitutional syphilis settled in the human frame, rendering existence painful and anxious, poisoning life, by depriving the sufferer of his natural energies of body and mind, it would be useless to multiply cases further of this class. I may say, "ex tribus disce omnes;" and in truth you see them in flocks, at once recognised by the "facies syphilitica," in all the popular or fashionable sanatory resorts,—water cures, Turkish baths, and other more legitimate and recognised agents of restorative action, mineral waters, which attract the sick and the idle.

SYPHILITIC MENINGITIS OF THE SPINAL MARROW.

Case VIII.—The surgeon of a regiment quartered in Belfast came to me, accompanied by an officer of his regiment, whom he felt anxious about, on account of a regular but progressive loss of sensation in the abdominal walls; it was now spreading down the thighs, accompanied by diminished power of the lower limbs in walking, with weakness of the knees—in short, he and the patient both feared an ultimate development of paraplegia. This gentleman, who, except that he was pallid, had otherwise no mark of disordered health, had been for more than eighteen months under the care of an hospital surgeon of Dublin, who successfully treated him for primary ulcer, for secondary symptoms, and latterly for tertiary symptoms. He was at that time taking the hydriodate of potash, 5 grs. three times a day. I was so convinced that this was a case in its essence identical with the syphilitic meningitis of the brain, only transposed to the fibrous covering of the spinal marrow, I advised the increase of dose of the hydriodate to 10 grs., and no other medication. Within three weeks the disappearance of the symptoms was complete, and I know he had recovered well a year after.

In confirmation of this interpretation of the case, I copy the following from the Lancet, May 12th, 1860:—"Professor Trousseau has in his wards a patient who contracted chancre five years ago—for which he received no treatment. He now suffers from periostitis, complicated with paraplegia. Ricord also recognises forms of paraplegia among tertiary accidents."

CASE OF TERTIARY SYPHILIS COMPLICATED WITH QUOTIDIAN AGUE.

Case IX.—In March, 1838, I was required to visit a military officer, who was home on sick leave, having been on service in the Ionian Isles for eleven years. He had, after a period of ten years in that country of uninterrupted health and vigour, contracted the malaria epidemic there, which assumed the quotidian form. The disease being unrelieved by the treatment adopted there, a medical board sent him home on sick leave, after nine months' futile medication; he came to London, where he again received medical advice, then in Dublin; and finally, not far from his own residence, he consulted a physician in Belfast. No diminution of his sufferings followed; fever, emaciation, debility, continued to wear him out, and I was summoned to supervise the struggles of impending death.

He described to me a daily accession of eighteen hours of fever,—a cold, a hot, and sweating stage; six only of remission. The remission of six hours, for food and rest, was a poor credit account, against a debit of eighteen of waste. The emaciation was consequently frightful; wonderful how he could have existed under it, even for eleven months. He informed me that he had for a long time been unable to stand, from swelling of his ankles. On examination, there was great tumefaction of both internal maleoli; there was a soft tumour on the os frontis, which he told me had been lanced by an army surgeon; another, larger, but similarly containing fluid, was on the left parietal bone. I then proceeded to examine the state of the liver and spleen, the usual pathological seat of morbid evidence of malarious poisoning; there was not the slightest tumefaction of either, nor of effusion into the peritoneal cavity. I then put to him this direct question—When had he venereal sores? His reply, Never!! I felt puzzled, but had no course left, but to accept the case as one of ague with anomaly, under his solemn and repeated denial of venereal contamination. Twenty-grain doses of quinia during the remission for some days checked the severity of the fever, and improved the appetite; but he soon retrograded to the former state. I had him then removed, by easy stages, eight miles a day, in a reclining posture, to a relative's house, near my own residence. I then commenced a graduated course of arsenical solution, under which he again improved; he took at the culminating dose ten drops three times a day, but receded again. I then sent him to a dry, sandy soil, on the sea coast, where no malaria could be supposed to exist. He was in an excellent hotel. The preci-

pitation and impending fatal termination were evidently not remote; days, not weeks, must measure the time. On my morning's visit, after days almost without food, nights without sleep, and the sense of his approaching end, he said, he had remembered, during the watching of the night, that an affair had occurred just as he was sickening of the ague, and which had escaped his memory—though, he believed, of no moment, he would tell it me. "Just at this *particular time*, he had accepted the tender advances of his Greek landlady. Not many days after, he showed a trifling abrasion on the penis to the surgeon in attendance on him for the intermittent fever, who cauterised it; it healed immediately, and was never again presented to his mind until the previous night." I at once said, "That is enough for me; I'll give you a chance for your life; I'll immediately use mercury"—he at once consented. I had been reading, not long before, Mr. Colles' directions for the use of mercury in venereal hectic. I directed his servant to rub in a paper of mercurial ointment (15 grs.) inside the thigh once a day; made him take food as usual, such as he could swallow. The second night, he slept throughout the whole night—deep, sound, refreshing repose; he knew hunger (for breakfast), a stranger to him many months; he sat up in his room the third day; appetite insatiable, could walk well, but for the feeble degenerate muscles—his ankles bearing his weight. No man ever beheld a higher triumph of medicine. No tonic ever equalled the magic power mercury evinced in this case. If it be not the specific for syphilis, the world has none. But the recovery was not without its vicissitudes and its delays—a disease so engrafted into the system could not be erased in a day, nor by a single remedy. He brought on an attack of rheumatism by sitting out on the rocks, under the temptation of the most charming weather of the month of May, and the superb scenery of the coast of Antrim, one evening; this, of course, stopped for a time the specific treatment; then he had rheumatic sclerotitis—but never again the ague. The amendment, though occasionally interrupted by further tertiary symptoms, sarcocele, a node under the biceps of the humerus, tumefactions, and pain of knee-joints, was progressive,—and in eighteen months he was a perfectly sound, healthy, robust gentleman, married a young lady; at sixty has a fine healthy family, and is an officer of rank in her Majesty's service.

In this case the secondary symptoms appear to have been entirely obliterated by the presence of fever, and the hectic of syphilis assumed the quotidian form. The fibrous covering

of the bones must very early have taken the syphilitic action; for the abscess over the frontal bone was lanced by a military surgeon in Corfu. It was from my reflections on the course and history of this case that I was led to see the high probability of the internal fibrous membranes participating in the syphilitic contamination; but I only fixed and determined the fact in the case of Mr. F. in the year 1845, the fatal conclusion of which I have recorded in this paper.

I have before observed, that in writings on the venereal disease the deaths from syphilis have not been recorded; and Mr. Colles, in his admirable work on the venereal disease, states that, when fatal, it is usually of diarrhœa, dysentery, dropsy, or some of the diseases of exhausted and worn-out constitutions, that the patients die;[a] but he gives no example, and, as I remember, refers to no case of paralysis, or any other case of disease from syphilitic action on the brain and nervous system. It is probable that few surgeons would have countenanced me in this crisis (Case IX); but I am justified in the result, and am fortified by the testimony of the employment of mercury in tertiary syphilis by Mr. Solly:—Case XXVII.: "The patient, named Hawkins, had long been suffering from secondary syphilis. He had been in the house some months before he came under my care. He had necrosis from nodes of portion of the frontal and parietal bones, but without any symptoms of cerebral disease, or even irritation. I happened, however, to remark to the pupils, that such cases were not unattended with danger, as inflammation of the dura mater, arachnoid, and pia-mater, sometimes suddenly supervened, and the patient would then sink from such effusion. About two days after this, I was called to him, in consequence of his becoming drowsy and stupid. When I arrived, I found him not quite insensible, but scarcely able to answer any question when roused; and, when left undisturbed, he was in a semi-comatose condition. I immediately ordered five grains of calomel every four hours, a blister to the back of the neck, and to be dressed with strong mercurial ointment; he got rapidly worse, and soon became insensible; but in twenty-four hours the mercury began to take effect, and it was most delightful to see the rapidity with which the cloud was again removed from his intellect. In forty-eight hours, he was sensible enough to answer questions, and ultimately quite recovered. It was also interesting to observe an immense improvement in all his syphi-

[a] *Vide* Colles on Venereal Disease, p. 11.

litic symptoms; his nodes became healthy, and some large rupial sores which he had on his thighs and legs began to heal, and progressed most favourably. Previous to this attack, he had been taking the iodide of potassium and sarsaparilla, and a generous diet"[a].

This case fully supports my statements, that the hydriodate of potash will often fail us in tertiary syphilis, and we must have recourse to mercury; we are not to be bound by an inflexible rule, that no mercury should be used for tertiary symptoms.

Dr. Todd also gives his opinion as follows:—"In such cases we must trust to the repeated use of iodine, as one element of cure; and we may aid the influence of the iodine by the occasional use of mercury, either at the same time with the mercury, or, as I prefer it, alternately"[b].

I cannot conclude this very important subject, an endeavour to extricate the entanglements and difficulties of the natural history of syphilis,—a subject which has employed the minds of the ablest men who have ever practised medicine, and yet is still enveloped in obscurity and doubt, without referring to the very primary sign of the disease. For admitting the general acknowledgment of induration as a fixed and significant test of a contaminating ulcer, yet no man has been able to affirm that an ulcer without induration may not contaminate the system—even the simplest superficial abrasion may be followed by all the successive phenomena of syphilis.

It is not unworthy of commemoration, that, since the work of John Hunter on the venereal disease—an attempt to systematize and explain the natural laws of this abstruse disease—was published, none have followed more closely in his steps, nor examined his doctrines in a spirit more akin to that of the great naturalist, than members of the Irish School of Surgery.

Mr. Richard Carmichael, with great originality and boldness of conception, promulgated the non-mercurial treatment of syphilis; he supported his precepts with great ingenuity, and arguments drawn from cases demonstrative of the truth of the doctrine. His doctrine rapidly spread, and won converts and followers amongst the profession in all the chief cities and schools in Europe. But it had not universal acceptance, and, especially in Dublin, it did not pass without challenge, as it was subversive of the teaching of John Hunter on two leading

[a] Solly on the Brain, Second Edition, 1856.
[b] Todd's Lectures, Nervous System, Second Edition.

positions,—the unity of the animal poison, and its perpetuation in the human system, unless arrested by the action of mercury.

Mr. Abraham Colles, a man whose mind was trained and formed in the study of Hunter's works, received the new doctrine with the philosophic caution and scrutiny which was the element of his mental conformation. He, as Hunter himself would, at once bestowed all his penetrating sagacity, his deliberate judgment, and inimitable power of observation, to the examination of the truth and substantiality of the doctrine.

The result of that calm and deliberate inquiry is contained in his work on the venereal disease,—a work worthy of the man, and the school which he so long adorned as the Professor of Surgery; for clear and comprehensive description, faithful narrative, and depth of reflection, it cannot be surpassed. That portion, especially, which refers to the use of mercury, deserves more particularly to be commended, being, indeed, on this subject, the best work extant.

To their joint works may be traced all the elements of subsequent experiment and research into the natural history of syphilis; and, accepting M. Ricord as the interpreter of the present state of opinion of this important disease, certainly the most abstruse and complicated within the range of medicine, and receiving his treatment as that most generally established, it shows that experience is leading men back more nearly to the text of Mr. Colles, and to the restoration of mercury into its former place, as the sole remedy for syphilitic disease, namely, true primary (whenever that may be discovered), and for true secondary disease, which cannot be mistaken.

I shall close with the words of the first authority living in surgery[a], referring to his own belief in the power of mercury judiciously used: "You will, I am satisfied, make, in the great majority of cases, a real and permanent cure of the disease. You must not suppose that we have advanced alike in all the departments of surgery; indeed, I am sure that in some things we have gone back, and this is one of them."

[a] Sir Benjamin Brodie, Lectures on Pathology and Surgery, 1846.

Art. XV.—*Examples of Cystic Disease; with some further Observations on Cancer.* By Maurice H. Collis, M.B., F.R.C.S., Surgeon to the Meath Hospital; Member of Council, Royal College of Surgeons; &c. &c.

1. CYSTIC DISEASE OF BREAST, WITH ENDOGENOUS GROWTH IN THE INTERIOR OF THE CYSTS, SHOWING THE MODE OF ORIGIN OF THE CHRONIC MAMMARY OR ADENOID TUMOUR.

2. CYSTIC DISEASE OF THE BREAST, COMPLICATED WITH CANCER.

3. SINGLE ENCYSTED HEMORRHAGIC OR FIBRINOUS TUMOUR IN THE POPLITEAL SPACE.

4. MULTIPLE ENCYSTED FIBRINOUS DEPOSITS IN THE TESTIS.

These cases are given as types of diseases, and it is not to be inferred that the accompanying observations are founded solely upon them. The deductions arrived at are the result of some study of the subject; and it would be both tedious and unprofitable, even were it possible, to enumerate all the steps by which I have been led to form them, or the entire data on which they rest.

Case I.—*Cystic Disease of Breast, with Endogenous Growth in the interior of the Cysts, &c.*

Mrs. S., a healthy lady, about forty-five years of age, the mother of several healthy sons and daughters, consulted me, two years ago, about a tumour in her breast, which had begun to give her some uneasiness. The account which she gave me was to the following effect:—Many years before (at the least, fourteen), while stooping to caress a pet lamb, she received a blow in her breast from the animal's head. This caused her some temporary pain; and a small, movable tumour was soon after perceived in the part. After several years, she suffered another injury in the breast, upon which the tumour increased in size; however, as the pain resulting from the injury did not continue, she did not consider the temporary uneasiness sufficient to render surgical interference necessary. Three or four months before she consulted me, she sustained a third injury in the breast. From this out she suffered constant uneasiness, and almost continual pain in the part. The tumour now rapidly increased, projecting the skin forward, and rendering it livid over the most prominent point. The superficial veins, also, became enlarged and tortuous. To the eye it had much of the appearance of an encephaloid tumour. Upon handling it, fluctuation became evident; and although there was a basis of solid matter, the bulk of the tumour was plainly of a cystic

nature. The solid portion lay deep, and, as well as we could make out, was hard and firm; we could trace no adhesions, and there were no large glands in the arm-pit or about the collar-bone. As it was a source of much uneasiness, both of mind and body, and as the cystic growth was rapidly increasing, and, moreover, as there was a solid and probably not a cancerous basis to the growth, I resolved to remove it: the entire breast was condemned, because of its small size, and the probability of the cysts permeating it in all directions.

I need not weary the patience of the readers of this journal by a minute detail of the operation or subsequent treatment. Suffice it to say, I secured a clean and bloodless surface by a little extra care in tying or twisting all bleeding points; and I brought the edges together with a number of wire sutures: the wound healed with rapidity, and the patient was out of my hands within a fortnight. I have frequently seen her since, and her health continues excellent, and her spirits are much improved by having lost what had long been a source of anxiety to her. No return of the disease is to be expected in this case.

A dissection of the breast showed multitudes of small cysts, the size of pin's heads or small peas, a few as large as hazel nuts, one the size of a hen's egg, and two of somewhat smaller dimensions; some contained a sero-sanguineous fluid; some were filled with solid matter. A careful study of several gave the following interesting results, which illustrate the progress from cystic to adenoid tumour:—First, in the largest cyst I found a solid growth, projecting towards the centre, and attached by a pedicle to the lining membrane of the cyst; then, in another cyst a similar mass was found, completely filling up its cavity; while in a third, which was similarly filled up, the pressure of this endogenous growth had produced an atheromatous degeneration of the walls; the fragmentary remains of other cysts could be made out round some other of these endogenous growths. The minute structure of these substances was exceedingly elementary; there was a certain amount of common fibrous stroma binding together a mass of simple fibrine cells, which deviated in no apparent manner from the undeveloped cells of plastic lymph. They were arranged in acini, attached to a pedicle, like minute cauliflower growths, but of a firm consistence, and devoid of the creamy juice which permeates all cancers. The mode of increase was evidently like that of a tree, not only increasing by interstitial deposit, but by additional branches. The resemblance to the genuine structure of the mammary gland was confined to the mode of arrangement. There were no ducts, no cavities in the lobules, and, of course, no epithelial lining. The substance was identical with that of

Sir Astley Cooper's chronic mammary tumour, or Velpeau's adenoid tumour. It was evident that the cystic growth was in process of being superseded by the fibrinous, and that a time might have come when all trace of cysts would have disappeared; we had first the cyst pure and simple; then, the endogenous growth, filling the cyst more or less; and, lastly, the cyst disappearing under the pressure of the new growth. The cyst perished by the ordinary oily degeneration; there was nothing special in it, different from the mode in which effete material is removed from the economy under common circumstances; only there was no reproduction, just as in all fatty degeneration. The new material neither infiltrated nor inflamed the tissues on which it pressed.

Indeed, with the exception of cancer, I know of no morbid growth which acts as a foreign body when living; and further investigation may, perhaps, show us that cancer does not so act until the cancer-cell has lost its vitality. In the present case, there is no doubt about the matter. The cell-growth filled up the cyst, and still continued to grow, while the cyst, unable to expand, became compressed, lost its vitality, became oily, and was finally absorbed, or burned up, and removed. This is probably the history of most, if not all, chronic mammary growths, as has been ably stated by Mr. Paget and others. My reasons for recording the case are not so much to confirm these views, as to contrast and compare it with the remaining cases on my list, which are types of other forms of cystic growths.

The second case, cancer with cysts, has been already alluded to in this Journal, vol. xxv, p. 335. I shall briefly reproduce it. A lady, aged 38, mother of one child, very large and stout, complained to me of a small swelling in the upper part of the left breast; it was movable under the skin, and attached to the gland, but standing up from it; it was hard and nodulated, the seat of lancinating pains of much severity, and it had enlarged veins over its surface; it was far from the nipple, which was not retracted; it increased very slowly, the lady had been in bad health, with fatty heart, and occasional congestion of lungs. Consequently, I temporized, giving iron, arsenic, and iodine, and at first using discutient lotions, then doing nothing locally, as I found that interference increased both general and local uneasiness. Gradually, I observed the breast to swell, until it became raised to the level of the original tumour, which was almost lost in the new development. The surface of the breast felt granulated, as if shot were scattered

under the skin. Bloody serum oozed from the nipple, almost from the first. With all this (which took nine months to occur), the lady's health became considerably improved; and as I could not assure her that she had no cancer, although the bulk of the tumour was cystic, I was urged to remove the breast. This was done three years ago (Oct., 1857), and as yet there is no reason to apprehend a return of the disease. The growth, which first showed at the top of the breast, was composed of the tough, fibrous tissue of the breast, inflamed and condensed by the presence of large, oily, cancer-cells, stained with melanotic pigment. The remainder of the breast was studded with small cysts of simple form; many of them communicated with the ducts of the gland; they were filled with sero-sanguineous fluid; and some of them contained minute secondary cysts, with slightly-scolloped edges, attached by a pedicle to the lining membrane. These secondary cysts were full of a similar fluid. In no instance was there any endogenous growth of a solid nature: I searched for it with care. Nor were there any cysts in the cancerous portion of the gland, owing, no doubt, to its great density. Hence, I was driven to conclude that the two diseases, though coincident in the same breast, were, in reality, independent in origin and progress,—the cyst originating in inflammatory action on the ducts of the gland, and the cancer having its seat in the interstices of its fibrous stroma. It would have been most interesting to have found the two together in the same section of the breast, and to have observed whether the cancerous substance would have appeared as an endogenous growth springing from the cell-wall, and destroying it, as the more simple fibrinous growth seemed to do in the former case. But, however interesting this might have been in a scientific point of view, it was infinitely more satisfactory to have removed it while the cancer was in a quiescent state.

Case III.—*Hemorrhagic Fibrinous Tumour in the Ham.*—One of great interest to me. It was that of a labourer, who received a blow from a spade-handle in the thigh, close to the vessels as they pass into the popliteal space. A small, soft tumour quickly appeared, which gradually increased in size and solidity, and remained of an oval outline; when it came under my observation, several years after the injury, it had grown to a large size; it filled the popliteal space, and projected considerably on its inner margin; it was firm, heavy, rolling loosely in the somewhat loose areolar tissue of the ham, painless, but very troublesome from its weight and interference with the motion of the limb. No glands were enlarged in the groin,

nor was the current of blood interfered with in the veins; there was neither œdema nor varicosity. Had it been in the testis I might have concealed my ignorance of its nature under the name of sarcocele; but, situated in the ham, it was termed a tumour of plastic material, certainly not a cancer, and nothing more. I removed it, but with some difficulty, as often happens with glandular tumours of apparently loose connections. The man got well, left hospital, and went to a distant part of the country, where I heard, in a few months, that he was suffering from an enormous semi-fluid tumour in the ham. He subsequently died of pain, and exhaustion from profuse discharge; but the particulars of his relapse I have never been able to learn with accuracy, as he was not seen by any medical man, and I only heard of him through a third party. The section of the tumour was most singular; I had never seen a similar at the time, and I have only seen one since perfectly alike. The centre was occupied by a black semi-fluid coagulum; outside this was a layer of soft, dark-coloured lymph, the result of a previous clot in process of organization; outside this again was another, and another layer, less and less dark, and more thin and firm; until the outermost of all, which was a dense, firm, fibrous envelope, closely adherent to the layer which lay next beneath it, and endowed with vessels as abundantly as any natural fibro-areolar tissue of similar density. It was strikingly like the section of a cured aneurism to the eye, so much so, that I at once named it, "The hemorrhagic fibrinous tumour." It was similar in its central cavity, filled with fluid blood, and in its concentric laminæ of variously organized lymph; it differed from it only in its origin from a clot of blood; in its growth, by internal hemorrhages, as well as by interstitial deposit, and in the layers of lymph being more firm, and less brittle. I could not trace any special connexion with vein or artery, such as would have accounted for the hemorrhage; and its cystic envelope must be looked upon rather as an accidental development of the most external layer, than as the original source of the hemorrhage. The disease commenced, evidently, as an effusion of blood from injury; the clot, instead of being absorbed, became organized; and, once organized, it came under the action of that mysterious law by which tumours grow—the law of independent vitality, by which they grow out of proportion to neighbouring parts, and often at their expense—a law which is but another expression of the fact, that like breeds like,—a law in virtue of which cell-growths, whether normal or abnormal, reproduce their own kind, and which in the present case, from a simply organized clot of

blood, produced a tumour, which grew by successive hemorrhages. I have since seen a perfectly similar tumour to the above. The situation of it was the testis; and the tumour had acquired an enormous size, completely destroying all vestiges of the proper structure of the organ, the fibrous tissues of which could be distinguished, pushed to one side, and compressed. The section of the tumour was similar to that described above, and the history was also much the same; there was superadded some infiltration of the supra-pubic areolar tissue, and of the inguinal glands. In this case the disease had been set down, by some, as schirrus, which its size alone ought to have disproved, the schirrous testis being a small tumour; while others, who looked carelessly at the resemblance of the fresh section to brain-matter, gave it the title of encephaloid, which its great chronicity equally disproved. Having seen the former case, I was able to name it; and, as there was difference of opinion, which gave rise to remarks disparaging the value of microscopic examinations, I sent a portion to Mr. Paget, with a request that he would do me the favour to examine it. This he most kindly did; and, without being aware of what my opinion had been, he fully corroborated it. He stated that the form of tumour was one he had not met with before; that it was composed of small nuclei and cells, differing but little from lymph-cells; that it was probably of slow growth, and was certainly no form of cancer. The tumour had been years growing; and caused the death of the patient, from gangrene, the result of self-inflicted injuries.

Case IV.—*Multiple encysted Fibrinous Deposits in the Testis.*

A labouring man, aged 40, received some injury of the testis six years ago. Soon after he observed a small, hard kernel on its inner side. This increased slowly up to last April, and became gradually troublesome from its size and weight. Since April it has rapidly enlarged, and by its traction on the cord has become the cause of much pain; there had been no second injury, as far as he can remember, to account for the sudden increase in the rate of growth. He has lately made some attempts to reduce the tumour by mercurial ointment, strapping, and the use of iodine, with little, if any, success. He is otherwise healthy, has never had venereal in any form, and is not married. The tumour is now the size of a cocoanut, measuring 5½ inches by 4 in its diameters; it is oval in outline, departing little from the form of the healthy organ. It is firmly elastic in all parts, except the upper and anterior,

where a collection of fluid evidently exists; pressure in this point gives the feel as if the finger sank through the fluid into a cup-like depression in the solid tumour. No enlargement of glands could be made out; the skin was not adherent in any part to the tumour; nor was there any pain experienced, except what was referable to the traction on the cord. The man's health was good; the tumour interfered with his work; it was not cancer, and I removed it. He made a rapid recovery, and is since well.

A section of it showed a number of cysts, filled with lymph, organized in the peculiar manner which is characteristic of the organization of coagula. The cysts were perceptible on the first section, and their glistening whiteness contrasted strongly with the pinkish colour of their contents, and with the gray tubular substance of the testis, much of which could be seen in detached islets through the tumour. All the cysts were full of these remains of coagula; when hardened by a day's immersion in Goadby's solution, the coagula became brittle, and could be readily turned out of the cysts, to which, however, they had a minute vascular attachment; they were not attached by any pedicle to the wall of the cyst, as in the proliferous variety; but seemed, as in Case III., to be hemorrhages into the substance of the organ, which had acquired an independent vitality, and had become surrounded by a cyst. A superficial examination would readily confound them with masses of encephaloid, which their colour and outline caused them to resemble; a careful inspection, independent of aid from the microscope, showed them to be more firm, and less juicy, more friable, and less pulpy, less evenly white, and more yellow, than encephaloid. Of course, under the microscope, they are readily distinguished, the cells being smaller than the nuclei of the cancer-cell, and unable to resist the action of dilute acetic acid, as the latter do. I have often urged on young microscopists the necessity of using a few chemical reagents in all cases admitting of a doubt; and I take this opportunity of repeating the advice, as many otherwise good observers have fallen into blunders by its neglect. Many a time when the cancer-cell cannot be seen in a specimen, the addition of the acid will cause the characteristic nuclei to start into view in great numbers; and the converse is equally true, that cells which deviate but slightly from the lymph-cell may be mistaken for free cancer nuclei, until their cell-wall is broken up by the acid.

I shall now give in a tabular form the signs by which, as a

rule, these various tumours are to be distinguished from one another, and from the two leading types of cancer:—

Schirrus (chronic cancer.)	Encephaloid (acute cancer.)	Hemorrhagic Fibrinous.	Simple Cysts.	Adenoid.
Grows slowly.	Grows rapidly.	Generally slow at first; often increases with energy.	Same as preceding.	Slow generally.
Is small, hard, and heavy.	Is large, soft, elastic, and of moderate weight.	Whether large or small, is always elastic; heavier than encephaloid; lighter than schirrus.	Very variable in size; granular when small; fluctuating when large; light.	Small, hard, and heavy generally, but sometimes acquires a great size
Early adhesion to neighbouring fibrous structures.	Adhesion is slow to take place in proportion to rate of growth.	Adhesions rare, trivial, and probably accidental.	No adhesion.	Loosely rolling single, or pediculated tumours.
Many small, roughly nodulated surfaces.	Many large, smoothly nodulated surfaces.	A few large, smoothly nodulated surfaces.	Hard, small, detached granules or large smooth surfaces, with intermediate forms.	No adhesion, unless when ulceration mechanically takes place.
Immediate poisoning of lymphatics, and rapid secondary deposits in glands.	Poisoning of glands or lymphatics seldom occurs prior to ulceration.	Poisoning very rare; probably never without ulceration.	None.	None.

I have thus striven to place in a tabulated form the marks that will generally enable a careful observer to distinguish these tumours, especially in the earlier periods of growth. It is of the greatest practical importance to be able to give a decided opinion at the outset; and, where our own minds are made up as to the proper course to be adopted, to urge it upon our patient in the most effective manner. It is perfectly possible, and by no means difficult, to recognize a genuine cancer, whether schirrus or encephaloid, of the smallest size. In the majority of cases of schirrus, the eye can make the diagnosis, though no prudent surgeon will trust to it alone; but it is a fact that, if a good light be thrown upon the skin, minute dimples or depressions will be seen over or near the tumour. These mark the attachments of the subcutaneous bands which run towards the tumour, and are produced by the shortening

of these bands. It is not necessary to have actual infiltration of the skin by cancerous matter to produce them; they are, in fact, the forerunners of this infiltration, and are often valuable as giving warning of the earliest approaches of it. They are not present in pure encephaloid, which is to be recognised by the other signs given above, nor are to be found, as far as I know, in any of the more innocent growths.

If the skin be carefully pinched up over the tumour, and over a neighbouring sound part, the difference of adhesion can be felt and seen most easily, if it exist in ever so slight a degree, just as comparison assists in ascertaining slight shades of dulness in phthisis.

Of growths which are not cancer, but which equally with it have their origin in the lymph-cell, and are interstitial or infiltrating, there are almost as many varieties as there are cases. After reading most of what has been written about them, and having seen a good many, I am satisfied that this whole class may, for practical purposes, be included in the following formula:—"*The nearer in form and power of development that the constituent cells of a tumour are to the healthy lymph-cell, the more innocent is the tumour: the further removed, the more destructive.*" To expand this a little, and make it intelligible, we find the healthy lymph-cell small, circular, slightly granular, with a little nucleus, and developing into a fibre. Our simplest tumours are composed of cells, scarcely, if at all, to be distinguished from the above; and these white fibrous, or desmoid tumours, are the most innocent possible growths, as a general rule. A stray exception may occur, now and then, to prove the rule. We then come to fibroid, fibro-nucleated, recurrent fibroid, fibro-plastic, fibrinous tumours, named according to the fancy of writers, who recognize alike their similarity to simple fibrous tumours, and their divergence from them. These are of variable malignancy; they are of as variable minute construction. Not only do their constituent cell-elements differ more or less in form from the primary lymph-cell, but they also differ in power of development. Some remain always as cells, and never develope into fibres; these are the most recurrent. Some make attempts at development, and hence the caudate cell of various form; some appear as nuclei, only without external cell-wall. Again, power of development into fibrous forms is quite different from active reproduction; generally it is not associated in the same cells. The recurrent tumours are masses of rapidly produced cells, or nuclei, with no attempts at the formation of fibre.

Of these I have seen many examples, none more remarka-

ble than the case of a man from whose shoulder such tumours have been removed, at least twenty times, by Professors Rawdon Macnamara, Senior and Junior, and by other surgeons. My friend, the present Professor of Materia Medica to the College of Surgeons, knowing the interest I took in such subjects, kindly gave me an opportunity of seeing the tumour on one occasion. It was a mass of most elementary cells, low in organization, active in reproduction, and was the most recurrent tumour I ever heard of. There is some tendency to this form of growth in all secondary tumours, whether glandular or local relapses.

Cancer itself can be brought under the above law. It is no heterologous or parasitic formation. It is simply a monstrously abnormal plastic growth; its cells differ as widely as possible from the healthy type. In acute cases they are rapidly produced, make scarcely an attempt at development, and die off with rapidity; in schirrus they are formed more slowly, and in much smaller numbers, live longer, and make some attempt at caudation, but they are still farther removed in form from the typical cell of healthy tissues.

The more I think over the subject of morbid products, the more am I convinced that, in the above formula, we have the expression of a law that includes most of their phenomena. It will, slightly modified, apply not only to large classes of tumours, but also to tubercle and to pus. Tubercle is a lymph-cell, of low vitality, incapable of development into healthy fibre, dying after a short existence, and generally becoming a foreign body. Pus may be described in words almost identical —their material difference being one, probably, more of chemical constitution than of vital power—for both are possessed of almost a minimum of vitality. Tumours are composed of cells whose vital force is greater than pus or tubercle; and this vital power is rather spent in reproduction, than in development, as in the healthy cell. The ordinary plastic cell goes through certain phases, dies, and is removed; its place is taken by a new cell, developed, probably, from the nucleus of its predecessor. The abnormal cell fails to arrive at perfection, often becomes a monstrosity, and has a tendency not only to reproduce itself from its nucleus, but to generate in neighbouring lymph organisms similar to itself. Thus the constituent cell of the tumour has a certain independent vitality, similar to that of the entire tumour; or rather the converse is true—the tumour is composed of cells of independent vitality, and hence it possesses the same form of life with the cell. And, as the life of the cell is of a low type, so is that of the tumour. I cannot but

think that many of the able minds which have been engaged in studying cancer, in its minute anatomy, have failed to make an adequate impression upon practical surgery, because they have been led away to look on cancer as a thing quite different from any of the ordinary structures of the body, instead of a perverted form of a natural structure. And I am sure that their views, carried out to their legitimate conclusion, would lead us to despair of any remedy for cancer but the knife, or other agents of destruction. Whereas, if we regard the cancer-cell merely as a perverted lymph-cell, we shall never rest until remedies are found which will influence it to a more healthy type.

I am sure we neglect too much the auxiliary treatment of good tonics, especially mineral tonics, good air, and abundant food, with proportionate exercise; and we should have slower tumours, and fewer relapses, if we compelled the attention of our patients to these matters.

Whether chemistry, combined with the microscope, will ever lead us to the knowledge of how best to effect our purpose, is more than I can say. The study will, at all events, lay open many valuable truths—it will amply repay any one who can give time to pursue it. The actions of many medicines, may I not say most, are involved in obscurity; and we prescribe them on grounds which our utmost efforts cannot rescue from the taint of empiricism. Microscopic chemistry will solve some, at least, of these problems. For example:—The diuretic power of bitartrate of potash is explained when we see the force with which it dissolves the epithelial cells of the kidney; its value in certain conditions of the liver is similarly explained. Ether is not only useful for its stimulant properties (the result of its rapid combustion, as chemistry has taught us), but also for its expectorant action, which is due to its solvent power over the bronchial epithelium: for this knowledge we are indebted to the microscope; and many other valuable results will reward those who apply themselves to it.

A word or two with regard to local treatment, after operation for the removal of tumours. A rapid cure is of the highest importance: it is obtained with less inflammatory action, and is so far less favourable to the plastic exudations in which secondary growths will spring up. I do not believe that suppuration is at all beneficial as a preventive of relapses, nor can I conceive on what imaginable grounds such a theory could rest. To obtain union as rapidly as possible, it is not enough to secure all bleeding vessels at the time; we must also prevent the possibility of blood lodging under the flaps; and

we must do this without exerting such pressure on the latter as will either provoke reaction or interfere with healthy circulation in them.

The mode of dressing I adopt is as follows:—Let us suppose an amputation of the breast. I insert a wire suture at every inch; having twisted them, I cut the wires off at about an inch from the twisted portion; when this is completed, and the edges of the wound lie nicely in contact, I lay along each side of it, and parallel with it, two large compresses of lint filled with soft cotton, taking care to get their edges under the ends of the wire: these compresses are for the purpose of making elastic pressure all along the sides of the wound, thus preventing any accumulation of blood under the flaps; and they also interpose between the skin and the cut ends of the wire sutures, and prevent chafing; over the track of the wound a wet compress can be laid, and the whole secured by a few turns of a roller, applied with moderate tightness. If there has been any dissection of glands from the pouch of the axilla, a sponge rolled in lint, or a handful of cotton, can be similarly used, to prevent accumulation of blood; and when the arm is brought to the side, sufficient pressure is made. A little ingenuity will adapt this mode of dressing to many operations. I have used it in amputations of limbs, castration, the removal of all tumours, and for the dressing of scalp wounds (omitting the stitches, or inserting as few as possible), and I have found it most useful. One advantage it possesses is, that we can easily inspect the line of wound, and sponge it clean without disturbing it: blood in the wound is the great cause of delay and danger after all operations—it prevents adhesion, causes suppuration, and tends to produce phlebitis and purulent absorption, or angeioleucitis; and, as this mode of dressing prevents its accumulation, it so far diminishes the risk of operating.

Art. XVI—*On a New Sign of Post-partum Detachment of the Placenta.* By John Clay, M. R. C. S., Senior Professor of Midwifery, Queen's College; and Surgeon Accoucheur to the Queen's Hospital, Birmingham.

The rules usually given in obstetric manuals, and text-books, for the management of the placenta, after the birth of the child, are:—to wait for a pain; or, to carry the finger along the cord to the os uteri, and, if its root can be felt, it may be fairly assumed that the placenta is thrown off, and may be easily extracted by gentle traction of the cord, with the aid of external manipulation. If these instructions be faithfully carried out,

can we rely upon the facts elicited as infallible proofs that the placenta is separated from the uterus? Pain may mislead, as it frequently arises from other causes than contractions of the uterus; and even if the insertion of the cord can be felt, it is not always conclusive on this point, as the root of the cord may sometimes be felt when the uterus is in a flaccid condition, by using moderate traction on the cord, and yet the placenta be not thrown off. Besides, the patient often lustily complains of the smarting pains caused by the frequent examinations deemed necessary to ascertain the fact; and often she positively forbids such a mode of interference.

Four years ago I was led, from these causes, to investigate the subject, with the view of improving, if possible, upon the old mode of managing the deliverance of the after-birth. I thus ascertained certain facts, from which I came to the conclusion, that a very simple sign existed by which the separation of the placenta, after the birth of the child, might be indicated; and, having tested it in upwards of nine hundred cases, I hope I may be considered to be fairly entitled to lay the results at which I have arrived before the professsion.

Before dividing the umbilical cord, I always apply two ligatures, and make both sufficiently tight to prevent the occurrence of hemorrhage. If the maternal part of the cord is now examined, it will be found to be in a flaccid condition, and almost free from blood; but if it be again examined, at an interval, say from one to three minutes, it will be found to have acquired increased specific weight, and that the vessels are more or less filled with blood. The one fact may be ascertained by poising the cord on the fingers; the other by slightly grasping the cord near the vagina, with the thumb and fore-finger of the left hand, and, with the fingers of the right hand, suddenly compressing it, when a well-marked sense of fluctuation is perceived underneath the fingers of the left hand,—a kind of resiliance similar to the feeling produced when an elastic tube filled with fluid is suddenly compressed.

When the placenta is thrown off, or sufficiently detached to give rise to a tolerably free hemorrhage, the cord loses its increased specific weight and the hydrostatic property just mentioned. These phenomena occur so invariably, that *the loss of the previously acquired hydrostatic properties of the cord after the birth of the child constitutes the sign of detachment* previously referred to.

The whole of the phenomena are manifested in three stages, viz.:—1st, a state of flaccidity; 2nd, a state of repletion; 3rd, a state of flaccidity.

If the umbilical cord be tightly grasped by a spasmodic

contraction of the os uteri, or by irregular contractions of the body of this organ, the *loss* of the particular hydrostatic properties may be delayed for a brief interval; but in a few seconds the spasm subsides, and those phenomena are produced which indicate the separation of the placenta, and that this structure may be safely extracted. These signs are not, of course, always equally marked in every case,—often requiring experienced tactile management, in order to detect their presence. When the uterus is in a flaccid condition, the phenomena are manifested in a very slight degree, but are still perperfectly reliable. On the other hand, when the uterus is contracted, with some degree of firmness, on the placenta, they are so well marked that the most inexperienced may readily detect them. In cases of partially adherent placenta, the disappearance of the hydrostatic properties, after being once fully developed, and the failure to deliver the placenta by the usual manipulations, have always indicated to me the necessity for promptly adopting artificial detachment by the introduction of the hand. In twin cases, if the cord is firmly tied, I have invariably found that the signs persisted until the birth of the second child. In one case, where the hydrostatic properties disappeared, after being well marked, before the birth of the second child, I found, on examination, that the corresponding placenta was detached, and I at once removed it, which otherwise would probably have been suffered to remain. Neither mother nor child incurred any risk.

It sometimes occurs that the placenta is separated simultaneously with the birth of the child. In this instance, the first series of phenomena may be absent; and it may be prudent to wait before proceeding to extract the placenta, although it may be generally effected with safety.

The practical value of the application of these facts to obstetrics is obvious, as by merely compressing the cord in the manner previously indicated, the precise time of separation may be easily ascertained, the placenta at once extracted, and the patients thus freed from those frequent annoying examinations usually employed. The prompt delivery of the placenta, on the first efforts of the uterus, is very important, as this organ contracts then more efficiently, and the risk of hemorrhage is not so great, and it may be fairly assumed that the puerperal convalescence is not so protracted as under a more dilatory proceeding.

To students, or inexperienced practitioners, it might be a safe instruction to impart,—not to interfere in the extraction of the placenta so long as the hydrostatic properties herein defined are persistent.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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12. *St. Luke's Hospital for Lunatics. Report for the Year* 1859. By Henry Stevens, M. D., Physician-Superintendent. Pamphlet, pp. 39.

13. *Seventh Annual Report of the Omagh District Hospital for the Insane, for the Year ended* 31*st March*, 1860. By Francis John West, M. D., Physician-Superintendent. Pamphlet, pp. 36.

14. *Annual Report of the Royal Lunatic Asylum of Aberdeen, for the Year* 1859. By Robert Jameson, M. D., Physician-Superintendent. Pamphlet, pp. 29.

15. *Thirtieth Annual Report of the Belfast District Hospital for the Insane Poor, for the Year ended* 31*st March*, 1860. By Robert Stewart, M. D., Physician-Superintendent. Pamphlet, pp. 36.

16. *Ninth Annual Report of the Wilts County Asylum, Devizes, for the Year* 1859. By John Thurnam, M. D., Physician-Superintendent. Pamphlet, pp. 51.

17. *Religious Revivals in Relation to Nervous and Mental Diseases.* By J. S. Bushnan, M. D. London: John Churchill, 1860. Pamphlet, pp. 46.

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19. *Reports from the Select Committee on Lunatics, together with the Proceedings of the Committee, Minutes of Evidence, Appendix and Index.* Ordered by the House of Commons to be printed, 5th August, 1859, and 27th July, 1860. Blue Books. Folio, pp. 244, and 91.

1. The Fourteenth Report of the Commissioners in Lunacy for England and Wales comes up to the 31st of March of the present year, and, like its predecessors, is an official document of the greatest interest, the several matters embraced in it being of more or less importance, and all discussed by them in the usual matter of fact and independent spirit. Amongst the contents of this valuable Report are sections under the following heads, each of which is fully considered, and important details given in connexion therewith, viz.—"Number of Insane Persons in Asylums, &c.; Licenses and Changes in Proprietorship; Average Weekly Cost in Asylums and Hospitals (for the Insane); County and Borough Asylums; Lunatic Hospitals; Metropolitan Licensed Houses; Houses receiving Pauper Patients; Provincial Licensed Houses; Military Asylum; Insane Soldiers set at large in the Streets; Single Private Patients; Murders by Patients; State Asylum for Criminal Lunatics," &c.

In addition to the above, is a very copious appendix, occupying so many as 56 out of the 157 pages of the Report in its entirety. We shall on the present occasion dispose of our limited space as best we can, by referring as concisely as possible to the more leading particulars of some of the foregoing subjects, commencing with the—

Borough and County Asylums.—These numbered 38 in all, and had a total population, on the 1st January, 1860, of 17,432, of whom 7829 were males, and 7950 females. Of the total number, as above, 227 were "private" patients, thus leaving the "pauper" class at the figure of 17,205. The total discharges of both denominations, during the year 1859, were 2929. The number recovered was 2120; deaths, 1712; and suicides, 7: those remaining under treatment on the 1st January, 1860, being 17,432, as above stated,—the number that was deemed curable being only 1952.

In regard to the expense of maintenance, we find that the highest average weekly cost per head was 12*s.* 8½*d.*, viz., at the Warwick County Asylum, with an average daily number of patients of 304; and that the lowest was 6*s.* 8½*d.* at the Birmingham Borough Asylum, with an average daily number of 353. The new County Asylum for Beds, Herts, and Hants, com-

menced operations in the early part of the present year, under the medical superintendence of Mr. Denne; it will accommodate 500 patients, and the estimated cost of the building was £65,000. The quantity of land attached to it is unusually large and liberal, being so many as 260 acres, and this too of the best quality, besides affording extensive views in every direction, two primary conditions for such an institution. An acre to every four patients, or 25 to each 100, the Commissioners themselves would deem a pretty fair allowance; here, however, we have, and with much satisfaction we now record it, more than double what has been suggested in this all-important matter of Asylum management, which augurs well for the generous spirit in which this new County Asylum will be conducted. Another item worthy of special note in reference to this establishment, one which we opine will be a model asylum in these countries, is that the tables are to have mahogany tops, as also that the seats are to be backed, a most essential matter for the comfort of the patients; and, further, that an abundant supply of "Windsor Chairs" is to be provided. We wish all success to this new institution, the Visiting Committee of which deserve the highest commendation, for having commenced their duties thus benevolently, and so entirely in accordance with the humane spirit of the age, as regards the treatment of those who are the subjects of so grievous and deplorable an affliction as insanity. The Commissioners close their special Report on this Institution by observing—"That the general arrangement appeared to be convenient, and well calculated for the treatment and comfort of the inmates; and the excellent manner in which all the works have been executed is no doubt due to the continued vigilance and attention of the Committee of Visitors during the progress of the works."

The next new Asylum referred to by the Commissioners is that for the county of Northumberland, situated near the town of Morpeth, which was opened for patients in March, 1859. It is designed to accommodate 210 inmates, exclusive of 22 beds in the infirmaries. Attached to it are 99 acres of land, which is also a very laudable and handsome out of door provision for the recreation, health, and employment of its patients.

The Report informs us that the Commissioners and the Committee of the Surrey County Asylum, an institution already containing so many as 955 inmates, had been in correspondence about an additional building, to accommodate 660 more patients, at a cost of £53,500, to which, however, the Commissioners most properly objected; and declined, accord-

ingly, to recommend the plans to the Secretary of State for approval, the Committee of Visitors being so unreasonable as to propose "to place 1600 patients upon a site hitherto considered by no means too large for less than half that number." We trust the Commissioners will continue firm to the last in opposing so unjustifiable a proceeding as this, not simply on the grounds of insufficiency of land, but on those still higher, and of the utmost moment in a humane and curative point of view, namely, the accumulation of the insane under one roof in such vast numbers as being only calculated to be productive of the most pernicious results, and to bring shame and disgrace upon the country at large, for its inhumanity in thus crowding its insane together, and this too on the miserable and pitiable plea of the most wretched and mistaken economy that was ever enacted. The Hanwell and Colney Hatch Asylums are standing monuments of a most extravagant and enormous expenditure of the public money in a futile attempt to treat the insane *en masse*, after the "cheap and nasty" system; and now further to add to that generally denounced and much to be deprecated system, would indeed be disgraceful, and only too well calculated to lower us in the estimation of surrounding nations.

City Asylum.—Plans for an Asylum for the City of London having been submitted to the Commissioners, the same were under consideration, with every prospect of one being erected, without delay, for 300 patients, near Dartford, which will be a long-needed and wished-for institution.

St. Luke's Hospital.—The Commissioners have, for a series of years, been using their best and most unwearied efforts to effect desirable changes and improvements in that "dreary" and wretchedly-located institution yclept St. Luke's Hospital. A recapitulation of those persevering efforts for ten years, from 1850, is given in this report, in an appendix, the sum and substance of which are, that, although the accommodation had been improved, and the medical and other attendance was unexceptionable, yet the number of patients had fallen off during the last ten years from 225 to 155, which was to be attributed, in the opinion of the Commissioners, "to the unfavourable locality and dreary aspect of the building, an opinion deriving support from the fact, that during the same period there had been a considerable increase of patients in the majority of Lunatic Hospitals in England;" and, accordingly, the Commissioners go on to say, that they "still hope the Governors will give serious consideration to the recommendations they (the Commissioners) had

repeatedly made respecting the expediency of removal to a more favourable site."

Over and over again, in these Annual Reviews "on Insanity and Hospitals for the Insane," have we felt it our bounden duty to support the Commissioners in their untiring and most praiseworthy, but unfortunately useless, endeavours to ameliorate the condition of the unhappily-circumstanced insane patient within the "dreary" walls of St. Luke's. We cannot but greatly respect the Commissioners for their persistence in so righteous a cause,—one which calls aloud for the sympathy of every one having the least spark of philanthropy. But, in a manner least expected, the state of things in that institution, domiciled in the savoury and stirring *locale* of Smithfield! (only to be equalled by our own metropolitan asylum, the Richmond, for infelicity of situation), is, by a retributive justice, coming gradually, but surely, to an end,—the public voice having been heard to such an extent, that patients are ceasing to be committed to its charge; and this, at such a rate, that the *famed* St. Luke's will stand out in bold relief as having died of inanition. We rejoice greatly at the prospect of this consummation, which, however discreditable it will be to its incurable Governors, charged with a most solemn and important duty, and with means at once ample and available to have built a new Hospital elsewhere, will, nevertheless, have been for the decided benefit of the insane patient, by blotting out from the list of hospitals a receptacle so frequently and deservedly pilloried for its shortcomings and failures both of omission and commission, on behalf of those who of all others should have secured for them the kindest, most liberal, and improved treatment.

Metropolitan Licensed Houses.—The Report of the Commissioners here enters largely, and very impartially, into the present condition of each of the "Metropolitan licensed houses," which we find amount to 38, the larger number of them, viz, 33, receiving none but "private" patients; and the remainder 5, both "private" and "pauper" inmates. The total number of patients of the "private" class in these institutions collectively, it appears, was 1287; and of the "pauper" class, 1264; making a grand total of 2551. The discharges amounted to 1426; the recoveries to 354; the deaths to 286, exclusive of 4 suicidal casualties. It struck us forcibly, on reading over the list of the names of the proprietary of these "licensed Metropolitan" establishments, within whose walls are contained so large a number of the insane, that so many as 8 should be under the

designation of "Mrs.," six under that of "Miss," and, though last, not the least in importance, 5 who are styled simply "Mr.," having no professional qualification whatever. We know of nothing more calculated to degrade "licensed" asylums, and so lower them in general estimation as to make their extinction desirable, than this system of directly sanctioning totally unqualified parties, however estimable and respectable they may be individually, thus openly to make merchandize of insanity, and so bring its scientific and humane treatment into great and well-merited contempt. If the Commissioners made even the least semblance of objecting to lay persons of either sex thus profiting by the insane, it would so far free them from giving official countenance to so pernicious a course of procedure; but, inasmuch as they are perfectly silent on that head, it must be taken for granted that it has their consent, which we cannot but strongly censure. This is not the first time for us to call attention to so highly reprehensible a state of things in respect of private asylums, nor shall we cease our protestations in connexion therewith until it is made a *sine qua non* that none but duly qualified members of the profession should have the responsible charge of the treatment of the insane of any class.

Provincial Licensed Houses.—The "provincial licensed houses" are also fully reported upon, and, with a few exceptions, like the "Metropolitan," satisfactorily. Their total number is 72; and their inmates, in the aggregate, amounted to 2465; the discharges during the year were 855; the recoveries, 365; deaths, 182; and suicides, 4. The same remark, in the way of animadversion, holds good with the "provincial" as with the "Metropolitan" asylums, as to unqualified persons being at their head, of whom there are so many as 28; namely, 16 males, and 12 females.

Military Hospital for the Insane.—This Report of the Commissioners animadverts strongly upon the fact that, up to the present time, and notwithstanding the Commissioners' repeated remonstrances with, and appeals to "the authorities of the War Office," no steps have been taken towards providing a public hospital for "insane military officers and soldiers;" and, again, the Report states: "The only establishment for the insane, in connexion with the army, is the Lunatic Hospital, in Fort Pitt, Chatham, which is rather a place for observation and temporary probation, than one for care and treatment." And, further on, we find what we would have scarcely given credence to, only that it appears in the pages of this blue book, that the War Office authorities were actually so lost to all common hu-

manity, and dead to every sense of what was due to public decency and safety as to "set insane soldiers at large in the public streets, with a view to throw the burthen of their maintenance upon the parish in which they might be found wandering!" Could any thing be more inhuman, or disgraceful, than such a proceeding as this on the part of the Government of these realms, or more calculated to make us appear, in the eyes of foreigners, divested altogether of the feelings of a Christian nation? We are really ashamed to think that such a scandalous state of things towards the insane of the army is still permitted to pass by unnoticed by the House of Commons. In our review last year, as well as on former occasions, we dwelt upon this most extraordinary and unjustifiable neglect towards those who have risked their lives in the cause of their country, and who, becoming the subjects of insanity, when especially every attention should be paid to their unhappy condition, and every appliance liberally supplied to meet the necessities of their case, are, instead thereof, thrown pitilessly and miserably upon the chance protection and cold charity of the workhouse, by being made wanderers on the public streets! This is really unbearable; and, for the honour of the country, so great an opprobrium should not be permitted to continue another Session of Parliament without being prominently noticed by some public-spirited and independent members in both Houses, (Why not Lord Shaftesbury, the excellent Chairman of the Commissioners, in his place in the House of Lords?) in order to effective means being taken at once to cure this crying evil.

Single Patients.—A considerable number of cases of improper treatment of many "single private, and single pauper patients," is enumerated in the Report; and the effective measures taken by the Commissioners to remedy the same, speak well for the constant watchfulness they exercise in the discharge of this important portion of their duty.

Murders by Patients.—Several pages of the Report are occupied with the particulars of two murders committed by patients—one being, unfortunately, a member of the profession, named Dr. Pownall. This patient had suffered from repeated attacks of mania since the year 1839, and was repeatedly obliged to be placed under restraint. Strange to say, Dr. Pownall had been the proprietor of an asylum, and twice made violent assaults on his own patients—breaking a poker upon the head of one, and assaulting the same patient a short time afterwards with a bludgeon, under the delusion that he was a party to introducing poison into his food; and shooting another in the leg, which was obliged to be amputated, the ill-starred sufferer dy-

ing the following day. After this last occurrence, which took place in June, 1854, he was put under treatment as suicidal and as dangerous to others, and remained so until the October following, when he was discharged, "not improved." We have no further account of him until the year 1859, when he became again depressed in the month of January, and his old delusion of poison re-appeared. In March following, he attempted suicide, by taking chloroform. In April, he went into the bedroom of his mother-in-law, and struck her violently on the head with a poker, wounding her severely; and afterwards, getting possession of a gun, he rushed with it into her room, but some men, fortunately happening to be in the house, took the gun from him, before he could do any mischief; immediately after this, he was placed under the care of Dr. Davey, of Northwoods, with whom he continued until the 10th of August following, when he was discharged, "recovered;" on the 30th of that month he murdered the servant of Mr. Leete, a surgeon, in Gloucestershire, by cutting her throat with a razor. It appears, on leaving Northwoods, he had been placed to lodge with Mr. Leete, accompanied by an attendant, whom, however, he was permitted to regard simply as a servant, and whom he had, of his own accord, discharged. For this offence, Dr. Pownall was put on his trial, and acquitted on the ground of insanity, and is now confined as "a criminal lunatic" in Bethlehem Hospital.

The Commissioners afford satisfactory evidence to our mind that they had, from data before them, cautioned Dr. Davey as to the danger of giving an immediate or "unconditional" discharge to Dr. Pownall, suggesting to him, at the same time, that "such discharge should be preceded by a leave of absence, under the 86th Section of the Act, whereby the patient's power of self-control might be tested for some little time." Notwithstanding this prudent caution on the part of the Commissioners, Dr. Pownall, as is manifest from the foregoing history of his case, was "unconditionally" discharged from Northwoods, and which resulted in the sad catastrophe, shortly given above.

State Asylum for Criminal Lunatics.—The State Asylum for Criminal Lunatics is mentioned, in the Report, to be approaching completion at Broadmoor, on Bagshot Heath, a distance of about thirty-three miles from London, two from Sandhurst, and one from Wellington College, near which is a railway station. The building, a three-story one (which is contrary to the best received opinions), will accommodate 500 inmates (400 males, 100 females), and has 290 acres of land attached to it. We regret to find it stated that the resident me-

dical superintendent's house is to be in the centre of the building, instead of being a detached one altogether. We had hoped the Commissioners would have taken due care to have this most desirable improvement carried out in an institution which must necessarily have been so much in their own hands as to ability in accomplishing anything of this kind, and which would have been so excellent an opportunity of affording a precedent for the future to all other asylums in this most important matter of detail.

Annexed is a summary of the number of private and pauper insane patients in England and Wales under treatment in public asylums, hospitals, and licensed houses, on the 1st of January, 1860:—

	Private.			Pauper.			Total Lunatics.
	M.	F.	Total.	M.	F.	Total.	
County and Borough Asylums,	121	106	227.	7,829	9,376	17,205	17,432
Hospitals, ...	998	754	1,752	120	113	233	1,985
Metropolitan Licensed Houses,	703	639	1,342	194	408	602	1,944
Provincial ditto, ...	874	732	1,606	377	373	750	2,356
	2,696	2,231	4,927	8,520	10,270	18,790	23,717

The Statistical Returns, &c., &c., contained in the Appendix, are very numerous and various, and will be found interesting records for reference, having been prepared, evidently, with much care, as has been the Report as a whole,—its pages affording the fullest proof of the Commissioners fulfilling their important duties with great ability, together with very commendable diligence, and much even-handedness to all parties concerned.

2. The General Board of Commissioners in Lunacy for Scotland, in their Second Annual Report, dated 30th of January, 1860, inform us of the resignation of the Earl of Minto, the original Chairman of the Board, and the appointment of Mr. Forbes Mackenzie in his stead, who, if he will only follow the example of the Chairman of the English Commissioners, the Earl of Shaftesbury, cannot fail to give satisfaction, and be a benefactor to the country in so important and responsible a post of public duty.

The Commissioners, in their first Report, were indisposed to admit that there was any real increase of insanity in Scotland, observing on that head:—

"It is probable that the increase of insanity is, in a great degree, only apparent, arising from more attention being directed to the

subject, and the consequent discovery of a greater number of persons affected with the malady."

Another year's experience, however, has changed their opinion rather on this moot-point, the present Report stating that—

"It appeared from the Report of the English Commissioners in Lunacy, that the number of the insane in England and Wales was undergoing a steady and serious increase. From the data before us, we fear that in Scotland the same distressing fact must be admitted. They show that the number of pauper lunatics which, on the 1st of January, 1858, amounted to 4737, had increased to 4980 on the 1st of January, 1859. We have no means of obtaining reliable returns of the numbers of the private insane, with the exception of those placed in private asylums; but there is great reason to fear that they are increasing in a similar ratio."

The total number of the insane in Scotland on the 1st of January, 1859, was 7878; of whom 2898 were supported by private funds, and 4980 by parochial rates. The Commissioners incline to the opinion that public asylums are preferable to proprietary ones for private patients—"preference being given," they remark, "by the friends of private patients to public asylums over licensed houses, which was a strong argument in favour of providing accommodation of a superior kind in connexion with the district asylums."

The Commissioners have strong objections, and very properly, to the "residence of pauper lunatics in licensed houses and lunatic wards of poor-houses, as well on grounds of economy as on those of general treatment,—the maintenance of patients, even in the lunatic wards of poor-houses, being less economical than their maintenance in public asylums."

Again, they observe thus eloquently, and much to their credit, on this head:—

"The fundamental principle on which these establishments (Poor-Houses) are conducted—that of affording a test for poverty, and to provide for the poor in the most economical manner—is antagonistic to that which ought to regulate the treatment of lunatics, and which, briefly stated, is the provision of every comfort which can reasonably be demanded to lighten the burden of, perhaps, the greatest calamity which can afflict humanity. . . . The treatment of the patients in these establishments can scarcely, in any instance, be regarded as in harmony with the humane views of the day. There is generally a great deficiency in cheerfulness and comfort within doors, a prison-like aspect about the airing grounds, and an almost total absence of the means of employment, both within and out of doors. Yet, notwithstanding the unfavourable

contrast which poor-house lunatic wards must, in these respects, bear to asylums, the cost of the maintenance of patients placed in the former class of establishments, especially when no restriction on admission exists in connexion with the form of the malady with which they are affected, is, perhaps, as high as that of those placed in the latter."

We entirely agree with the Commissioners in their views on the above subject, and are very glad to find that they are using their official influence with so much spirit in denouncing the locating of the insane in any receptacles except those specially adapted and arranged for their due comfort and care; which confessedly is not the case, and necessarily could not be, in a work-house, the very name of which, with its associations, is calculated to have a prejudicial effect on the future prospects of the unfortunately-circumstanced lunatics within its precincts.

The Report, in respect of those patients in the "lunatic wards of poor-houses"—who, in nine cases out of ten, are doubtless entirely hopeless as to cure, being the subjects of dementia, amentia, idiocy, &c., nevertheless requiring judicious and liberal treatment—proposes that the accommodation for them "should consist of cottages or separate buildings of a simple character, generally placed near to and in connexion with asylums, and in which the patients would enjoy an extended degree of liberty, from being in circumstances much more closely resembling those of ordinary life than can be realized in asylums as at present constituted."

With reference to the expenditure for pauper lunatics in Scotland, we find it stated that the average cost in asylums was £21 18*s.* 2¼*d.*; in poor-houses, £13 13*s.* 10*d.*; and in private houses, £7 12*s.* 10*d.*

There are eight public asylums in Scotland, in all of which private as well as pauper patients are received; they are as follow:—The Aberdeen Royal Asylum, Dundee, Dumfries, Edinburgh, Elgin, Glasgow, Montrose, Perth.

The Commissioners give detailed reports of each of the above, together with the licensed houses, which amount to nineteen; and also go with much particularity into the cases of single patients, and those in poor-houses.

A most voluminous and laboured appendix is attached to this Report of the Commissioners, the ranges of separate columns and figures in the almost innumerable tables connected with which would be exhaustive to the last degree to endeavour to master. This appendix, and its accompanying tables, commence at page 118, and extend to page 225, all closely

printed; so that the array altogether is assuredly of the most imposing character, and, at all events, must have been highly advantageous as to employment and remuneration respectively to office clerks and to the printer, if not to the readers, of such severely elaborated statistical documents.

But, unable ourselves to apply to any usefully readable purpose, in a necessarily brief review like this, the many points so ably discussed in this Report of the Scotch Commissioners, we heartily commend it in its entirety to those of our readers who take an interest in the deep things of psychology, as applied practically and statistically, well assured that they will be amply repaid for the time they must spend in a careful perusal of its well-arranged and minutely-classified contents. And here it occurs to us to remark, that we consider all blue books of this kind should be freely circulated, at least amongst those engaged in the superintendence of public institutions for the insane, —there being many valuable observations and facts embraced in them, thus brought together in an official and authoritative form, which would be most important and desirable to be in the hands of every medical superintendent of a public asylum in Great Britain and Ireland. The Report of the English Commissioners in Lunacy is, we are aware, pretty freely circulated, after the manner we have here indicated, being thus distributed, as we understand, at the expense of the country, and no more legitimate expenditure could be incurred; but, as regards the Scotch report, we have reason to believe that the shabbiest system possible of economy is pursued towards it and its authors by the Treasury, it being to a certain extent almost a sealed book, from the very limited *free* circulation which is enabled to be given to it, and which certainly should not, and we hope will not, be continued. The biennial blue book report on the state of the insane in this country—a report second to none for great interest and ability, as these pages have so often borne witness to—is distributed much less parsimoniously than its Scotch sister, but not to the same extent as its English relative. It is high time that this stepchild system should cease and determine, and the three "blues" be put upon the same liberal footing of circulation, which at present is so unfairly apportioned amongst them.

3. To keep our readers *au courant* in all matters and events of the year, bearing upon the subject of this review, we have embraced in our list an Act of the last session of Parliament for making "better provision for the custody and care of criminal lunatics" in England and Wales.

So long since as the year 1845, this country was fortunate enough to obtain the passing of a measure of a similar and much-required provision, and for the obtaining of which, ultimately, the principal credit is due to the authorities of a northern asylum for their unremitting and energetic efforts with Government after Government, for a series of years, until this desideratum was accomplished, by the establishing of the State Central Asylum, at Dundrum, for the due care and confinement of the criminal insane of Ireland, whose presence amongst the ordinary inmates of the district hospitals for the insane was felt, and this for obvious reasons, to be a serious grievance and drawback to these invaluable establishments.

We need not here repeat what we so often have had the pleasure of noticing in these annual reviews, the exceedingly satisfactory working of the Central Asylum at Dundrum, under the very able and judicious superintendence of its resident physician, Dr. Corbet, who has been at its head since its first opening, and secured for it a character of such high repute and usefulness as to make its *alter ego* in the sister kingdom a long-wished-for consummation, the Commissioners of Lunacy, for a lengthened period, there having been agitating and re-agitating in their reports, as reproduced in these pages, for the establishment of a similar receptacle in England. It is seldom that Ireland has been favoured in anywise before her all-powerful sister, the former being satisfied with the "crumbs" which fell from the latter's bountifully-supplied table; but here, in this instance, Ireland certainly has had the advantage, and this, too, for no inconsiderable time. In the course of the few further remarks we shall have to make on this portion of our review, we shall be enabled to show that the Irish Act is of a much more satisfactory and preferable kind than this one for England, which latter contains fifteen sections, as follow:—

1. That Her Majesty may appoint an asylum for criminal lunatic.

2. Secretary of State may direct criminal lunatics to be confined in the asylum.

3. Nothing in this Act to affect the authority of the Crown to make other provision for the custody of a criminal lunatic.

4. Secretary of State to appoint council, medical superintendent, assistants, servants, &c., and remove them at pleasure; also, with the approval of the treasury, fix the salaries of the officers, &c.

5 & 6. Secretary of State to make rules for the government of the asylum, laying the same before Parliament.

7, 8, & 9. Provide for the removal and discharge, and absence on trial, of lunatics.

10. Provides for the conveyance and maintenance of the lunatics.

11. Lunatics escaping may be retaken by superintendent, &c.

12. Parties rescuing or permitting escape of lunatics shall be guilty of felony, and liable to penal servitude for four years, or imprisonment for two years; and any officer or servant carelessly allowing a lunatic to escape, to forfeit a sum not exceeding twenty pounds, and not less than two pounds.

13 Any superintendent, or other person employed in asylum, ill-treating the inmates, or wilfully neglecting them, to be guilty of a misdemeanor, and subject to be indicted and fined, or imprisoned, or both, with or without hard labour; or to forfeit, for every such offence, on a summary conviction before two Justices, any sum not exceeding twenty pounds, nor less than two pounds.

14 & 15. Commissioners in Lunacy to visit asylum once or oftener yearly, and report to Secretary of State.

These particulars of the foregoing Act having been thus stated, it only remains for us to say that we consider its punitive sections — making such minute provision for the "penal servitude, fining, indictment, and imprisonment, with or without hard labour," of "the medical superintendent," with his nurses, attendants, servants, or other persons (for thus exaltedly with his own subordinates and menial servants is that official classed)—to be in the last degree insulting and gratuitously humiliating to him, as a member of an honourable and humane profession, holding a most responsible and confidential position, and in his person a scandalous libel upon the profession generally, as if any of its members could, by any possibility, thus act; and even, for argument's sake, granting that he should, the common law of the land would be quite sufficient to fall back upon for his due punishment, without thus singling out him, and his peculiar office, so invidiously, together with categorizing him so offensively with mere servants. Like Cæsar's wife, he should be considered above suspicion; and this much we feel called upon to say, that Parliament has made a grand mistake in this kind of lunacy legislation, which is only calculated to throw us a century back in the treatment of the insane, by thus degrading and branding the head of an asylum, instead of everything being done to raise that functionary in social, moral, and professional posi-

tion, which will alone be the means of securing for the insane truly humane and considerate treatment, and not by such disgracefully penal enactments, as given above. We trust that the Commissioners in Lunacy had nothing to do, directly or indirectly, in the framing of the sections we have now referred to. Certain, however, it appears to be, that some party or parties must have been behind the scenes—some foe to the insane, though believing himself to be otherwise—suggesting the provisions in question, and which the sooner repealed, the better it will be on every account. In Ireland, we are rejoiced to be enabled to state that no such felon-like clauses are in the Act, passed in 1845, establishing a central asylum for criminal lunatics, nor in any of the legislative enactments connected with our public hospitals for the insane generally; and, to the present time, in neither the former nor the latter has a case ever arisen requiring the aid of the criminal law being brought to bear against the humblest servant, much less the medical superintendent; and hence it was that, in the Bill introduced by Lord Naas, when he was Chief Secretary for Ireland, for amending the lunacy laws in this country, and which in our last annual review we did not fail to characterize as it deserved, that, inasmuch as it contained clause after clause of a penal nature, in common with innumerable other unpopular and totally unnecessary novelties, it was mercilessly dealt with in its progress through the House—so strongly expressed was the public mind against it—and its author obliged ultimately to withdraw it, which, it is to be hoped, will be a warning to all future Chief Secretaries, when essaying improvements in our lunacy laws in Ireland.

In concluding these remarks on this questionable Act, we had intended to suggest that the status of the medical superintendent of the asylum for criminal lunatics as to salary, domestic accommodation, &c., should be such as to make the appointment a kind of promotion to the superintendents of the county asylums generally, who, as matters at present stand in these countries, have unfortunately no promotion or advancement to look forward to with any degree of certainty in their important and onerous vocation, which is both a great evil and a great hardship to men thus bearing "the heat and burden of the day." Here, however, is an opportunity for remedying in some degree this hard lot of medical superintendents; and we hope that the salary will be of that liberal kind as to make the appointment, with its other advantages, as nearly as possible equivalent to a commissionership in lunacy, which would

be found to be productive of the most salutary effects, both as regards the good management of the intended new Government asylum, and the best interests of the insane generally.

4. The January number of the Psychological Journal has eight articles, of varied interest and excellence, commencing with one entitled "Paradoxical Psychology," being, amongst other matters, a plea for the identification, generically at least, of *genius* and *madness*, *intellectuality* and *nervopathy*. The author in question is Dr. J. Moreau (de Tours), Médecin de l'Hospice de Bicêtre, who has undertaken the notable task above referred to, in a recently published work, whose title is: "*La Psychologie Morbide dans les Rapports avec la Philosophie de l'Histoire ou de l'Influence de Nervopathies sur le Dynamisme Intellectuel.*" The position taken by the Continental writer may be reduced, pretty nearly, to the following, viz:— That "every affection of the nervous system is identical, as to essential character, with the cerebral disorders of which the words *insanity* and *idiocy* sum up the innumerable symptomatological varieties;" and the opposite of this is ably maintained by the writer in the Psychological Journal. He contends, and we think with unanswerable correctness, that, so far from being normal, the hyper-excitation of the nervous system which is either symptomatic, or the cause of insanity, is a morbid condition, and to be ever thought of and treated as such; and, after a prolonged and able historical examination of the subject, the writer's conclusions are thus given:—

"Are we then to admit that the relations which exist between genius and insanity are so inextricable that from whatever point of view we observe them, however thoroughly they may be analyzed, we are compelled, in expressing them, to have recourse to a paradox? Is it true that the paradox of which we have sketched the history has a legitimate claim to be admitted within the boundaries of psychological science? We believe not.

"It is obvious that if we use expressions which tend to confound together two different classes of phenomena, nothing but confusion can result. Gradually and insensibly, as morbid may shade off into healthy states, or healthy into morbid; nevertheless, the two states exist. The limitation of our present information respecting their points of departure the one from the other, affords no justification for the adoption of any hypotheses which confound the one state with the other at the root. Speculation of this kind, in place of hiding, impedes research, by substituting foregone and hypothetical conclusions for suggestive observation."

The above remarks will commend themselves to every rational mind, and prepare our readers to endorse the following sentiments, with which our notice of this paper must conclude:—

"Now we affirm that the *quasi*-high intellectual states which are observed in certain morbid conditions of the nervous system, are invariably characterized by a preponderance of the automatic over the ratiocinative actions of the brain. That there is with these states a greater or less loss of that co-ordination of the faculties which is necessary for the most perfect intellectual action. But to describe genius of this stamp as the highest manifestation of the intellect, is simply a perversion of terms. Wherever genius of any form is found associated with a morbid condition of the nervous system, there it may be predicated we shall find a more or less manifest determination from the normal action of the intellect in its entirety. In no respect is this more clearly remarked than in the preponderance of impulse over motive, which, as Coleridge remarks:—

'Though no part of genius, is too often its accompaniment. For the man of genius lives in continued hostility to prudence, or banishes it altogether, and thus deprives virtue of her guide and guardian, her prime functionary, yea, the very organ of her outward life. Hence a benevolence that squanders its shafts, and still misses its aim, or resembles the charmed bullet that, levelled at the wolf, brings down the shepherd. Hence desultoriness, extremes, exhaustion—

And thereof cometh in the end despondency and madness!

Let it not be forgotten, however, that these evils are the disease of the man, while the records of biography furnish ample proof that genius, in the higher degree, acts as a preservative against them; more remarkably, and in more frequent instances, when the imagination and preconstructive power have taken a scientific or philosophic direction, as in Plato—indeed in almost all the first-rate philosophers, in Kepler, Milton, Boyle, Newton, Leibnitz, and Berkeley.'

"Concede Dr. Moreau's category of theories by means of which he arrives at the conclusion that idiocy, insanity, scrofula, rachitis, the neuroses, and genius are congenerous; concede to him also that this of necessity leads to the proposition, that wherever the intellectual faculties are raised above the common level, it indicates a morbid condition of the nervous system; concede these things, and it would of necessity follow that Swift's satirical demonstration, that madness is the source of all human genius, and of all the institutions of the universe, becomes a profound truth. As such, it is regarded by Dr. Moreau, who mentions it as an *instinctive* appreciation of the 'truths' for which he combats. Need we say more?"

Next in importance, if not, indeed, more important, is the

following article, entitled, "*Hysteria in connexion with Religious Revivals.*" We could wish that this document were in the hands of every person in the kingdom who has been, or who may be, brought into contact with the movement referred to; and which, as the writer states, having "originated in the north of Ireland is now extending itself widely in this country" (England). The information here afforded respecting the real nature and character of hysterical affections, in general, and more especially of those connected with religion, is most important; and, could it be brought before the minds of those misguided persons who have been lately so instrumental in producing and propagating such morbid states among their deluded followers and victims, might well lead them to blush, were they indeed accessible to any such feeling, for the monstrous part they have acted in this matter. The portion of the article taken up with the scientific and pathological view of the subject is much to the purpose, and the castigation inflicted on the pathological charlatans who have lately dealt in the delusions connected with "Ulster Revivalism" is as severe as it is merited. We regret that our space will admit of but a single quotation, as illustrative of the manner in which the writer deals with the practical part of his subject, but it will give our readers a just idea of the spirit and manner of the whole. It is as follows:—

"Now if we compare the foregoing account of hysteria with recent actual occurrences, we shall find a complete and remarkable coincidence between them. Starting from the fact that (in a community of persons mostly uneducated, mostly in the condition of imperfect physical tone induced by mill labour, and mostly possessing a dexterity in handicraft that would enable them to exercise a great degree of control over their muscles), an unusual interest has been stirred up with regard to the things which concern eternal life. It may next be observed, that this interest has been made a means of attracting large numbers of individuals to crowded places of worship, where they have been excited by the most energetic denunciations of their own lost and fallen state, as well as by threats of the Divine vengeance impending over them. It must be remembered that these denunciations and threats have reference, in the creeds in which the revival took its origin, not to actual, but to original sin; and that hence they were calculated to excite emotions of the utmost terror and despair, from which no way of escape would be pointed out by the preacher along the path of duty. The devotees would be instructed to wait for the Spirit of grace to descend into their hearts; to wait, not in action, not in striving after a holy life, but in contemplation of their own imputed sinfulness and impending destruction. The feelings hence arising would be intensified by the sym-

pathy of surrounding numbers, would be sustained by the iteration of the preacher, would be directed at no practical aim, would be held off from the muscular system by a sense of the decencies of public worship, as well as by the reflection that bodily flight affords no relief from mental terror. In a congregation thus situated, there will soon be an individual whose power of emotional self-consciousness has reached its limit, while the emotion is sustained by the awful words—the repetition of hell!—hell!—hell!—issuing from the pulpit. Then will come the hysterical cry, succeeded by the hysterical convulsion. When the convulsion abates, if the sensorium have been saturated by terror, by an anticipatory self-feeling of the torments of the damned, this feeling will display itself in action, prior to the return of consciousness as regards ordinary outward impressions. Broken words and imperfect actions will indicate the ruling fear; will have reference to Satan, and to flight from or avoidance of his snares. The conversation of bystanders, when relevant to this ruling fear, will serve to guide or modify the acted dream; and their uttered anticipations of coming relief and peace will, as the fear is exhausted, gradually realize themselves. Smiles irradiate the countenance, the Most Holy Name is heard upon the lips, and the somnambulist either awakes in a state of rapture and excitement, or sinks into the sleep that is demanded by her fatigued and enfeebled frame.

"In accordance with the principle already laid down, the occurrence of one hysteric fit, in a place of worship, will be exceeding likely to precipitate another, by abruptly breaking into the self-contemplative state. Moreover, if the preacher point out the person affected as one by whom saving grace has at that moment been received, as one predestined from eternity to conversion and final perseverance, the incident is eminently calculated to impress and convince his hearers, to add indefinitely to the power of his words, to arouse the most intense longing for a similar visitation, and to excite the most lively dread lest the grace sought for should be withheld. By both kinds of operation, hysteria is continually propagated and increased.

"Upon recovering from the immediate effects of the paroxysm, the state of the 'subjects' may admit of considerable variation. In some, even if not in many instances, the shock will be found to have dethroned the reason; and the unhappy patient will awake from somnambulism to fatuity or mania. In others, the original terror being completely removed by the assurances of the preacher, a state of feeling is induced, of which gratified vanity is the chief characteristic. The so-called penitent will converse fluently about her experience, describe her struggles and trials, her beatific visions, her eventual peace, her abiding assurance of salvation and eternal bliss, her profound repentance for her sins. She will seldom be ready to confess or bewail any particular transgressions; she will not be likely to afford any practical evidence of humility; and she will usually season her dish of marvels so as to suit the varying credu-

lity of her different auditors. She is jealous of her position as the *prima donna* of her chapel or her sect, and elaborates ingenious novelties by which to crush the pretensions of any intrusive *débutante.* However ingenious, she will become wearisome at last. The nine days allotted to terrestrial wonders will pursue their inevitable course, and will bring in their train a girl who escaped, in her vision, from two devils instead of one; or who can garnish the narrative of her flight by incidents from the *Mysteries of London* or the *Castle of Udolpho.* The first subject disappears from the scene, not to follow the example of Dorcas or of Lydia, but too often to lead a life concerning which her sometime hearers are glad to bury scandal beneath oblivion."

The writer glances, incidentally, at the subject in its theological aspect; and here also his observations are pertinent, and characterized by soundness of view, and respect for the inspired volume, as the great guide and standard in all such matters. We must, however, add, in fairness, that he appears to write with but imperfect information of the past history as well as the actual results of "the Revival," as is it popularly styled in Ulster. There is an air of hopefulness, as regards improved morals and religion among the population in those parts of Ireland where the movement has prevailed, as well as, anticipatingly, respecting its progress in England, on which the writer seems to calculate; but, from our own experience in the matter, we can by no means join in it. As a whole, we believe, the root of this evil—for such we conceive it to have been—was to be found in ignorance and delusion; and its fruit we are painfully convinced to have been that of bitterness and mischief, physical, moral, and spiritual. It is, however, now dead, and let it be buried; we could wish, with the appropriate motto, *requiescat in pace.*

The subsequent numbers of the journal present much valuable statistical information, on the subject of lunacy in general, the state in which it is at to be present found in the united Empire, and on the Continent, and the means of amelioration provided. There are also some highly interesting biographical sketches to be found in its pages, among which that of Pinel (p. 184), occupies a prominent and appropriate place. Our readers will find, also, an exceedingly valuable *resumé* of the psychological views of a young writer and scholar (Bain), who bids fair, shortly, to occupy even a still more prominent place in the world of scientific literature than that to which he has already attained. The chair, in the University of Aberdeen, to which Mr. Bain has just been elected, is, we must observe in passing, a high tribute, and we think a most just one, to his

remarkable attainments, and does credit as well to the government as to its nominee. When it is added that Dr. M'Cosh, of the Queen's College, Belfast—the voluminous writer on morals and ethics, and who distinguished himself, in 1859, by the public part which he enacted in, as well as the partial endorsement which he gave to Ulster Revivalism—was a candidate for the appointment referred to, our readers will, perhaps, the more appreciate these observations. Few more original and important contributions have been made, during the present century, to mental science, than those embodied in the two volumes of Mr. Bain which are here reviewed, and we heartily commend their perusal to our readers.

Our limits permit us but briefly to refer, before this notice closes, to the "Quarterly Retrospects," under the head of "Psychological," with which each number of the journal commences. And in making that reference we are compelled, in all critical candour, to repeat an observation made by us, in a former notice, as to the exceedingly indiscriminate, and we must add, in some respects, inappropriate character of these papers. While such subjects as "Sir J. K. Shuttleworth on Civilization," and "The Times on Civilization;" and even "The Educational Tendencies of Volunteer Corps," or "The Psychological Aspects of the Irish Exodus," may be considered as germane to the assumed title of these communications, others occur, which, as it seems to us, look very like "filling-up-stuff."

We might give examples of these but shall only call attention to that portion of the papers in question which refers to "Religious Services in Theatres" "the Social Evil," and "the Midnight Prayer Meetings" (P. xxviii—xxxiv). We confess, that, notwithstanding the approval accorded by the writer to the most extraordinary proceedings in question, and the praise (although it be but faint), which he bestows on the authors and agents in their carrying out, our own views, founded, as we think, on principle, and confirmed by the actual witnessing of some of these exhibitions, are quite unchanged; and these views we acknowledge to be the very reverse of favourable. If a principle be good, it will always bear "pushing out:" if a practice be commendable, it merits and demands extension. Why not, then, push out the theatrical principle in the religious movement in question? Why should the *Victoria* be rented for the mob, and not the Haymarket or the Drury-lane Theatre, for the nobility and gentry? Push the principle further; and why need churches be built, or even maintained, when it is found that the Theatre is at once more commodious and attractive? Is there no danger, here, of confounding light

and darkness—the kingdom of God and his enemy? Can the protest against sin which the Gospel demands be maintained by the preacher who treads the hired boards of the Victoria, and holds forth, under sufferance, to the very multitudes who flock to the same place, the night preceding or following, to be excited by the servants of Satan, and enlisted in the ranks of his followers, if they be not so already? And the same remarks, in our judgment, apply, though with some modification, to those most questionable *entertainments*, given to the unhappy female frequenters of the *pavé*, at midnight, by their, no doubt well-meaning, but, as we believe, most unwise entertainers. In all such experiments, which we cannot but look on as perilous, it would be well to bear in mind the caution suggested by the inspired volume against "doing evil that good may come."

We must avoid getting into a theological question, on the verge of which we perceive ourselves to be in such remarks; but, if there be any unsuitableness therein, we must transfer the blame to our respected contemporary, who has, in our humble opinion, not now for the first time, been betrayed into an error of judgment in overpassing the bounds of correctness in the psychological retrospect. Were we permitted to pursue our remarks, we should certainly add, that these midnight tea-parties, at which the Hon. and Rev. Baptist Noel, and others of his peculiar school of theology, appeared as the hosts of the unfortunate women whom they entertain at the strange *Soirees* thus prepared for them, seem to us to have neither countenance from Scripture, nor foundation in practical good sense. The Author of our religion did certainly sit down at general entertainments, and His enemies upbraided Him with having done so in the company of "publicans and sinners;" but we have no example in the Gospel of entertainments expressly prepared to receive harlots coming to them in this their avowed character. We would further like to know, if the conduct of the great Exemplar be pleaded as example—and we believe it has—do Mr. Noel and his friends appear among those abandoned women as their fellows in conviviality? We might further ask them, are they aware of the scenes which take place after their "social evil" soirees have been dismissed, and at the very door of their banquetting-house? They tell us of "girls" swooning, repenting, and being restored to virtue and their parents. This may be so; but we would beg our readers to bear in mind that Mr. Noel and some of his friends have been visitants to Ulster during the Revival mania of last year; that he and they witnessed scenes at which others felt unmingled disgust

and disappointment, in that locality, while they appeared quite pleased and satisfied with the same; that, in fact, these gentlemen are among the most earnest and enthusiastic in endeavouring to import Ulster Revivalism into London; and that, therefore, their judgments and tastes are not altogether to be depended on and followed in this and similar matters. We should much prefer the old and long-tried methods of reformation to any such scheme, which, in our judgment, is so calculated to do violence to the feelings and habits of Christian people of all classes, and of sober judgments, if these feelings and judgments are exercised under proper control. Before leaving the subject of these extraordinary—we had almost said spasmodic—methods of Christianizing the masses of profanity in our great cities, on which our contemporary seems disposed to look with so much favour, we would just hint that a very practical view of the question seems to have escaped their promoters. They cost vast sums of money. We have been informed that the hire of these wretched haunts of sin, such as the Victoria in Lambeth, amounts to somewhere about £20 per night, for one such. To this must be added various incidental expenses, which we need not particularize. Supposing *five* such places for "Special Services" to be open on the Lord's Day alone, in London, that would, in round numbers, give the expense at something like £100 per week. Let any practical man see the amount of capital which this weekly outlay represents, and say whether it would not be better spent on multiplying the ordinary means of grace—churches, ministers, catechists, schools, &c. But there is a *fashion* in these things; and the Baptist Noel mode now prevails, we hope not to possess a long reign.

In taking leave of "The Journal of Psychological Medicine," while we recognise in it the talent which formerly illustrated its pages, we must again repeat our impression, that a more careful selection of subjects, on the score of appropriateness, as well as a more careful handling of some of the topics selected (instance what we have just commented on), are still required, to enable it to keep pace and rank in the onward march of the professional journalism of our time.

5. The "Journal of Mental Science," under the able editorship of Dr. J. C. Bucknill, continues to maintain a high place among those devoted to that all-important subject; and the current year of its existence, now the sixth, will certainly not detract from the character which it has already achieved. Its pages are as far removed from "book-making," toadyism, puff-

ing, and other journalistic excrescences, as can be conceived; while the general tone of its articles is of an eminently practical and valuable sort. It would be vain to attempt an analysis of the contents of the quarterly parts now on our table; and our limits forbid lengthened extracts. We can, therefore, but give a cursory glance at what is supplied to its readers for the present year.

Its opening paper, in the January number, is from the pen of a clergyman, the Rev. W. G. Davies, who is officially connected, as chaplain, with an institution for the treatment of mental disease. Its title is, "Consciousness as a truth-organ considered; or, Contributions to Logical Psychology." This paper, which is followed by another under the same title in the April Number, is a very able and thoughtful exposition of a difficult subject, and in the direction whither all such treatises should proceed. The effort to base all dissertations whose subject-matter is *mind* on observed phenomena, thus assimilating psychology to physical study, and substituting the Baconian method of treatment for the merely speculative and theoretical, is a most laudable one, and one which, in such hands as those of Mr. Davies, will not only reflect credit on its author, but conduce to the interests of true science.

Important practical information, of a statistical as well as historical sort, respecting the present condition of the insane, not only in the United Kingdom, but on the Continent of Europe, will be found also in the pages of this number. We have also some of what may be styled the lighter reading connected with the same subject; as, for example, in a most attractive paper, written with exceeding power of pathos and truth, from the able pen of Dr. Conolly, entitled "the Physiognomy of Insanity."

In the April issue is a biography, apologetically conceived and executed, of the author of "the Raven"—Edgar Allan Poe—by Dr. H. Maudsley. It is difficult to peruse such a document without yielding to the influence of compassionate feelings, in some measure, over the grave of so much wretchedly-abused talent, power of temptation, and perverted feeling, with dire misfortune combined.

Among the subjects naturally and professionally connected with the *materiel* of the "Journal," "Ulster Revivalism" comes in for its due share of attention; and in referring to the view here taken of it, we feel bound to express our entire concurrence. There is here no "playing fast and loose" with a topic which, to all reasonable and duly-informed persons, bears its own character inscribed on every feature.

In an exceedingly valuable article, being a review of the now well-known pamphlet of Archdeacon Stopford (p. 167, in the January number), the writer disposes of this monstrous attempt to engraft mental and bodily disease on religion in a way which is both creditable to himself, and highly calculated to be useful to any who read, or who will condescend to receive due counsel and caution from one who is able to afford it.

Three several original contributions, each earnest, able, and to the purpose, on "Ulster Revivalism," appear in the January, July, and October numbers respectively, from the pen of the Rev. William M'Ilwaine, Incumbent of St. George's Church, Belfast. These papers are deserving of careful and attentive study on the part of all who "love the truth," as well as of those who, having "a zeal without knowledge," aided and abetted in the promotion of an excitement which has eventuated in the most pernicious results. The writer of the contributions now referred to, is a divine of the greatest eminence, experience, and faithfulness, as a Christian Minister, whose daily walk has been such that his "praise is in the Gospel throughout all the churches." From such a source, accordingly, it is a matter of the utmost importance to have a full, true, and faithful account of what has been going on in Ulster for a year and upwards, under the name of "Revivalism;" and, after a calm and dispassionate reading of Mr. M'Ilwaine's papers, all unprejudiced parties must be convinced that the whole, from beginning to end, was "a mockery, a delusion, and a snare." Happily, that mania, for such it undoubtedly was, would now appear to have subsided, and for which every credit is due to Mr. M'Ilwaine, who, though unaided by his brethren, if we except that excellent dignitary of the church, Archdeacon Stopford, and frowned upon by the so-called "religious world," yet fearlessly did his duty under the most trying circumstances, by boldly exposing the monstrous "deeds of darkness" of this so-called "Revival," and thus materially aided in making its abettors cease from their God-dishonouring proceedings in connexion therewith.

We would have desired greatly to reproduce here several important portions of Mr. M'Ilwaine's able, argumentative, and well-timed papers; but our space forbids us to do more, on the present occasion, than to give the annexed extracts from his concluding contribution, which appears in the last issue of the "Journal," now before us, and which will afford some idea of the reverend author's spirited manner and style of dealing with the confessedly delicate and painful task his solemn and bounden duty, as a minister of religion, and in its defence, had compelled him undertake:—

"I would desire to guard against a misunderstanding, or a perversion, of what I have felt bound to put on record here respecting the late current delusion. I am far, very far, from desiring to assert that none have been savingly influenced, and so converted, in a scriptural sense, even during this reign of error. Such cases, however, are best known by their Divine Author. His work never ceases among the children of men, and is carried on at all times, in His own way, and by His own appointed means. What I do mean to assert is, that most gross, carnal, and delusive notions, speaking of them in a religious sense, have been abroad, during the time referred to, under the head of conversion. I would further state, that the entire class of physical phenomena, with all their accompaniments, however wondered at and approved by some, and accepted by others, as facts providentially permitted, and intended by God to conduce to conversion, are utterly undeserving of trust or acceptance, as tending to beneficial results. And even as regards those cases of alleged conversion which may not come directly under this head, but which have arisen out of the excitement, and during the period of extraordinary religious movement in question, I feel strongly disposed to view them as exceptional, not to be relied on for genuineness, much less to be paraded as miraculous, but to be dealt with by all those who are concerned in their treatment with extreme caution."

"I have been compelled to lay the charge of ignorance, both in regard to the facts of scripture and the doctrines lawfully deducible from these facts, at the door of certain individuals. But an attentive observer will most easily have discovered ignorance of another description in the same quarter. I allude to that lamentable want of information and reflection which has discovered itself in *the confusion between what was purely natural, physical*, and to be accounted for on strictly natural and rational principles, with what *was set down as spiritual, divine, and altogether miraculous.* I designedly avoid exhibiting examples of these mistakes, and chiefly because such examples would have to be selected, not from the lower, untaught, and unthinking classes, where one might naturally have been led to look for such hallucination, but I regret to say, as truth compels me, from among the educated, professedly enlightened, and often the devout, yet too credulous and imperfectly informed on these matters. By many such, the very nature and use of a miracle, and of miraculous agency, would seem never to have been seriously and deliberately either known or considered. The entire history of fanaticism, enthusiasm, and religious delusion would appear to have been to them a complete *tabula rasa;* while the connected fields of knowledge, such as that of Psychology, the relations of spirit and matter, and even the *Ars ratiocinandi* itself, would seem to have been totally unexplored, or for the time forgotten. And, most assuredly, such subjects and such inquiries are most necessary for the religious teacher, the 'scribe well-instructed,' who has to wend his way and fight his battles through the hazardous roads and spi-

ritual conflicts of this nineteenth century. I am convinced that these and kindred topics are far from occupying their legitimate and indeed necessary place in the *curriculum* of instruction which even our Universities offer to the candidate for the awfully responsible office of Christian teacher. Had these subjects been duly learnt and digested by those who either necessarily or voluntarily were led into contact with Ulster Revivalism, those who stood aloof from its extravagancies, and accompanying evil and delusion, would not now have to lament over the mistakes of so many brethren, even from among that class which has been usually denominated the Evangelical, partially, and it is to be hoped but partially, led away from the steadfastness and sobriety of true religious principle and practice, under the deceitful glare of an earth-born meteor, as wild and as dangerous as any that ever dazzled and deluded the followers of Him whose name is THE TRUTH."

In the April Number we have "a descriptive notice" of the Sussex Lunatic Asylum, opened in 1859, for about 400 inmates, from the pen of Dr. Lockhart Robertson, its able physician-superintendent,—a paper not without much interest, and one which is drawn up with great attention as to detail. The salary attached to the office of the superintending physician, viz., £450 per annum, though comparatively liberal, yet is not, by any means, in proportion to that of the chaplain, who is paid £200 per annum. Lord Shaftesbury, the chairman of the English Commissioners in Lunacy, in his important evidence before the Select Parliamentary Committee on Lunatic Asylums, stated that the salary of a medical superintendent of a public asylum should be "from £500 to £600 a year, with house and allowances," and that the number of patients in his charge should not exceed 300.

A very readable and valuable article, entitled "Psychical Diseases of early life," by Mr. J. Crichton Browne, a son of Dr. Browne, the distinguished Scotch Commissioner in Lunacy, is also of the contents of the Journal for April, together with an equally important one by Mr. Gaskell, Commissioner in Lunacy, "On the want of better provision for the labouring and middle classes when attacked or threatened with Insanity." Anything of this practical nature from the pen of Mr. Gaskell, a gentleman of such great and well-appreciated authority and high official position in all matters touching the interests of the insane, is deserving of the best consideration; and, no doubt, every attention will be given to this excellently-conceived paper of his, with the general scope of which we ourselves most cordially concur. We wish we could afford space to transfer several portions of it into these pages, but we have only room for the annexed short extract:—

"To obtain the object now advocated, it seems desirable to extend legal sanction to a class of houses into which patients should be allowed to place themselves voluntarily, or be admitted on less complicated and stringent documents; and further, that in them a limited control only should be exercised over the inmates, extending possibly to certain rules of the house, a required presence at the family table, return home at an early hour, and strict prevention of absence during the night time.

"Such places offering an agreeable change of scene, quiet, and retirement, as well as the benefit of good advice, would afford a means of treatment much to be desired for incipient and transient cases. For those also convalescent from the more severe forms of the malady, they would prove of great benefit as probationary houses, intermediate between the asylum and home. There is good reason to believe that detention under observation for a limited period, in houses so constituted, would have the effect of preventing, in a great measure, the grave accidents which sometimes occur after the abrupt removal of a patient from the care and supervision under which he has been placed. A short residence in them would bring into operation and confirm the power of self-control, and thus, by promoting complete recovery, diminish the risk of relapse to which patients are now often subject from a too sudden return to their ordinary mode of life."

The contents of the July number of the "Journal," are: "A case of Homicidal Mania without disorder of the intellect," by Dr. L. Robertson, Sussex Asylum. This is a very remarkable case of impulsive homicidal mania, in which several murderous assaults, and all of the most treacherous and assassin-like kind, were made by the patient on officials, whilst an inmate both of the Sussex and the Kent asylums, respectively. The public generally have little conception of the imminent perils and dangers to which those in charge of the insane are constantly subject. The case here, so graphically related, "a tale unfolds" on that head, and will well repay a perusal. "Histoire Litteraire des Fous; par Octave Delepiere;" a review by Dr. Maudsley, and executed with ability and judgment. "On General Paralysis," by Dr. H. Tuke. We have on former occasions noticed with every commendation Dr. Tuke's practical papers in our contemporary, whose contribution now is of the same order of excellence, and on a subject with which he is evidently quite familiar, and must have studied with great carefulness in its several remarkable, and frequently obscure, phases. "On Physical Affections in connexion with Religion, as illustrated by 'Ulster Revivalism,'" by the Rev. William M'Ilwaine, A.M. We have already made some special remarks on this subject, so ably handled by the reverend author.

"On Potentiality and Actuality in Man," by Dr. J. S. Bushnan. This is a short paper, the brevity of which, however, does not detract from its merits, whatever it may enhance them. "Notes on Nursing," by Miss Nightingale; a review written by Dr. Bucknill, and in the highest terms of praise, as has been the case with all that this remarkable lady has said, done, and written, since she came on the public stage. "Annual Reports of Lunatic Asylums," a review. "Criminal Lunatics," by Dr. W. C. Hood, a review. "Observations on the Offices of Resident and Visiting Physicians of District Lunatic Asylums in Ireland," by Dr. Joseph Lalor: a review, entirely commendatory of Dr. Lalor's *brochure*, and in the course of which the learned reviewer says:—

"By all means let the visiting physicians enjoy 'their vested pecuniary interests,' as Dr. Lalor calls them, whether in the shape of salary or pension; but let them not stand in the way of officers so essential to the safety and general welfare of the inmates of asylums as the subordinate medical residents undoubtedly are—officers, indeed, upon whom, in this country and in Scotland, it is impossible to bestow too high a meed of praise. They are, in fact, to the resident physicians what his lieutenants are to a naval captain. A visiting port-admiral may be all very well in his way, but we cannot do without the lieutenants."

"Aspirations from the Inner, the Spiritual Life," by Doctor Henry M'Cormack. This appears to be a very original production, and from the prolific pen of a member of the profession of great provincial eminence. The reviewer concludes a laudatory notice of the work with the following pithy sentence:—

"This book is what is called a good book, without being insipid. Full of religious thought, it has not a tinge of cant or bigotry. It is also learned without pedantry, and is evidently the long accumulating record of the opinions and reflections of a highly cultivated mind."

The October number, the last of the series for the current year, commences with the proceedings of the annual meeting of the Association, which took place in London in the month of July, which occupies a large portion of its pages. The address of the President is eloquent and enlightened, as might be expected from Dr. Bucknill, whose social and professional position and literary fame amongst his *confrères* in particular, and the profession generally, are deservedly of the highest order. The meeting on this occasion was exceedingly well and influentially attended, and the proceedings transacted at it were

unusually important and interesting, and all conducted in a spirit of the greatest harmony, and a disposition to promote the interests of the insane to the utmost; to effect which, this Association can, no doubt, exercise a most potent influence, and be a very powerful engine in accomplishing a large amount of good to both the sane and the insane.

Not least in importance of the questions which came under the special consideration of the meeting was that with reference to the vexed point of "Visiting Physicians to the Hospitals for the Insane" in Ireland, which ultimated in the adoption of a unanimous resolution, proposed by Dr. Conolly—a name so highly esteemed and eminent in the profession—to the effect, "that the Association considered it desirable that all the responsibility of the management of asylums, and the treatment of patients, should be placed upon the resident medical officers of asylums, and that physicians not resident in asylums should be restricted to the discharge of the duties appropriate to consulting physicians." We need not say that this has always been the view we have taken and advocated on this matter; and we are rejoiced to find that the "collective wisdom" of psychologists, as represented by this long-established and rapidly-increasing Association, has now so fully endorsed our opinion in regard thereto. Several papers of great interest were read at this meeting, which are published in this number, and well merit being carefully studied by all members of the profession.

Our own metropolis is to be the *locale* of the Association's annual meeting next year, under the Presidency of Dr. Lalor, of the Richmond District Hospital for the Insane, when we augur there will be as successful a re-union as any that has yet occurred with this most respectable and important professional body, and upon occasion of which we hope and feel assured their brethren generally will receive them with nothing short of a real *cead mille failthe.*

"The Religious Aspect of Ulster Revivalism" (concluded), by the Rev. William M'Ilwaine, is the next article, one which we have already referred to. We have also "Medical Certificates of Insanity," by Dr. Bucknill; "General Paralysis," by Dr. H. Tuke, in continuation from the July number, and which the author discusses with much acumen, as before. "Observations on the size and construction of Lunatic Asylums," by Dr. Lalor. We can by no means endorse the novelties and heterodox views propounded in this paper, which are altogether contrary to experience, and at variance with the opinion of the best authorities, in respect of the points brought forward by

Dr. Lalor. Among which are large dormitories, which, in our view of the matter, are amongst the abominations of our public institutions for the insane, and the sooner exploded the better. No dormitory should contain more than six or eight, as a maximum. Dr. Lalor sees nothing objectionable in an unwieldy and unmanageable establishment like that universally-denounced one at Colney Hatch, and states that "the General Superintendency" of an asylum with 2000 inmates would be "about as easy for one head" as an establishment "for 250, with its many arbitrary and complicated subdivisions." Now, Dr. Lalor will permit us to ask him, if it be desirable, as all will agree, that "the influence of the chief resident officer should be brought to bear *constantly* on each case *individually*, so as that he might daily give to *each of the patients* such personal advice and instruction as seemed best calculated to subvert existing delusions or immoral propensities, and to instil sounder notions"? (p. 105) how could "one head," by any possibility, accomplish this necessary task? This "one head" would require to be something more even than Sir Boyle Roche's celebrated bird. Say that the "one head" gave but half a minute to each of his 2000 patients, here, at one fell swoop, would fifteen hours out of the twenty-four be swallowed up, being three more for "work" than the highest authority impliedly states should be so employed:—"Are there not twelve hours in the day?"

With regard to single sleeping-rooms, or "cells," as, we must say, they are rather infelicitously designated in the paper under consideration, Dr. Lalor states:—"I believe that the opinion is gaining ground more and more every day that single cells are not required by any means in large proportion; and the day may not be distant when it may be considered that they can be advantageously dispensed with altogether"! Yes, in the Millennial age, "when the leopard shall lie down with the kid," &c., certainly not a day sooner. It is, we believe, a pretty well understood matter of detail that one-third, at least, of the accommodation should be in single apartments; and the experience of most Superintendents, we will venture to say, is, that, whatever more this proportion should be, it should not be less; inasmuch as it is a constant source of annoyance in public asylums, and felt as a serious grievance amongst the better class of patients in them, so many being obliged to sleep in the associated dormitories. Dr. Lalor's approval of dining-halls so far meets with our own views, that we would, and have, strongly urged their general adoption, and this, too, for both sexes together, but not in larger proportion

than might be selected from an aggregate population, say of 300, being Lord Shaftesbury's maximum for an asylum number. A prandial gathering from 2000 would, doubtless, be nothing short of a Babel, even supposing that they were all of the sane portion of the community.

The papers that remain to be stated, as contained in this number of the Journal, are:—A Review on the "Fourteenth Report of the Commissioners in Lunacy;" "A Letter to the Rt. Hon. H. Walpole, M. P., &c., on Chancery Lunatics," by Dr. Bucknill; and, lastly, the "Report from the Select Committee on Lunatics to the House of Commons," a notice of which will be found further on in this annual review of our own.

6. The letter of Dr. Nugent, "to Extend the Benefits of Swift's Hospital," takes up a subject of the deepest moment and interest; and we are exceedingly glad to see that it has fallen into such competent hands, as the manner in which it has been discussed by him so fully testifies. Swift's Hospital, as that institution is popularly called,—its more correct title being, St. Patrick's Hospital,—is placed, as to locality, in a similarly unfortunate way, as the Richmond District Hospital for the Insane; both being in situations, of all others, entirely unfitted and unsuited for their purposes as institutions for the treatment of insanity; it being plainly evident that, for such peculiarly-circumstanced hospitals, the busy world immediately outside their walls, and that busy world composed of the most abject nearly of those living in the outskirts of the metropolis, north and south, as happens to be the case with each, must be, and is, a great drawback at the very threshold to their all-important objects. Beauty of situation, and a widely-extended prospect, are primary adjuncts, in matters having to do with the "mind diseased." First impressions, too, have a large share for good, or for evil, in the subsequent treatment of a patient labouring under insanity. And the impression that would be made, say, on a gloomy day, in the gloomy month of November, on a patient coming, perhaps, from a picturesque part of the country, and passing through the dingy and begriming streets in immediate propinquity with both Swift's and the Richmond, may well be imagined to be of the most depressing and unhappy kind. Having made these few preliminary remarks, it remains for us only to state, as shortly as possible, the purport of this well-timed letter of Dr. Nugent, which has been addressed to the Hon. and Very Rev. Dean Pakenham, a leading governor of Swift's Hospital, and one who, we believe, has always taken

a very lively and active part in its management. Dr. Nugent shows, in the first place, what the deficiencies of Swift's are, and how much behind the age it—a richly-endowed institution—is, in the means of treating its inmates with effect. Some of those deficiencies are:—1st. Inability for a proper system of classification. 2nd. Insufficiency of grounds for exercise and employment, respectively; its condition in that most essential requisite being transparently bad, namely, but five or six acres for 150 patients!! Whereas, the quantity should be, one acre for four, at least, thus making the defect in this item very great, and serious. In our notice, preceding this, of the Report of the English Commissioners in Lunacy, it will be seen that, in a pauper asylum even, so much as 260 acres of ground have been allocated for 500 patients; a very different proportion to that afforded to the "cabin'd, cribbed, confined" inmates of Swift's. 3rd. "The gloomy character of the interior—the very situation of the building precludes the hope of its being obviated. If new windows be opened out, or the old ones enlarged, the prospect, save from some few points of view, will simply extend to the adjoining dead walls, or neighbouring buildings." This is true to the letter, and just as stated by ourselves, before we had read it here. 4th. The sewerage is very bad; the water-closets ill-constructed, and occasionally offensive; deficiency as to baths, and apartments for refractory, &c., patients. 5th. The cures are below the average of any similar institution in this country. All these shortcomings on the part of Swift's are, individually and collectively, of a really very grave character, and requiring to be remedied, and that, too, with all convenient despatch. Now, the remedy suggested by Dr. Nugent, though completely organic in its character, is the only one that, under present circumstances, could be adopted to get rid of all the evils of the existing hospital; that remedy being "to abandon the existing premises, and to erect, on a salubrious, cheerful site, at a convenient distance from the city (say, not more than three or four miles), a regular institution, replete with modern improvements, for the effective treatment of mental diseases, but more particularly in their earlier or acute stages—thus to connect the funds, left by Dean Swift, to the securing a greater benefit to society at large than could be attained, were they, as is now the case, in great measure, simply devoted to the maintenance of incurables." This is well and effectively put by Dr. Nugent, who subsequently enters into the monetary part of the question, proving to a demonstration the feasibility of his proposition being accomplished on the part of the Governors, and who, we hope, will not throw a wet

blanket on it, or free themselves from their responsibility by pooh-poohing a matter which is of the utmost moment in all its bearings, and certainly should be taken up by them in their corporate capacity, and seriously discussed, in order to steps being taken as immediately as possible towards a consummation so devoutly to be wished for, as an entirely new and improved Swift's Hospital, which would shed increased lustre on the memory of one who did so much to meliorate for all time, by his noble endowment, the unhappy condition of those afflicted with insanity. Before leaving this excellent letter of Dr. Nugent, we would advise the Governors of Swift's Hospital to read, in the first and twelfth articles of this review, the fate of St. Luke's Hospital, of London; an institution like Swift's in many respects, richly endowed, and badly situated; its Governors, too, advised by competent and experienced parties to give up the concern altogether, and build anew elsewhere—advice, however, which they have spurned, perhaps laughed at, and ridiculed as "building castles in the air," and soforth—but mark the consequence—their Hospital is gradually sinking into extinction, patients being sent elsewhere for due treatment which they could not obtain in St. Luke's.

7. The Ninth Annual Report of the Committee of Visitors of the County (Middlesex) Lunatic Asylum, at Colney Hatch, brings the operations of that "Mammoth" institution down to the termination of the year 1859. The number of inmates it had then within its walls was 1,813, 692 of whom were males, and 1,121 females. The disproportion here of the sexes is very remarkable, but not taken any notice of, or attempted to be accounted for, in the Report. The total number of recoveries during the year was 168, 105 being males, and only 63 females. Here again is a singular difference, the proportion of cures amongst the males being so comparatively large, and that of the females so greatly the reverse. The total deaths were 135, 75 of the number being males, and 60 females. This latter result of the year was still more extraordinary than either of the others,—the mortality amongst the males, it will be observed, being so very large as compared with that of the females, which, on the other hand, was surprisingly small, scarcely 6 per cent., whilst that of the males was about 10 per cent. The causes of death in the males were:—Exhaustion and general paralysis, 36; epilepsy, 10; age and decay, 11; phthisis pulmonalis, 9; maniacal exhaustion, 5; apoplexy, 2; perforating ulcer of stomach, with general paralysis, 1; and pneumonia, associated with epilepsy, 1.

The causes amongst the females were:—Phthisis pulmonalis, 11; epilepsy, and general paralysis, each 10; natural decay, 4; epilepsy complicated with phthisis, 3; congestion of lungs, epilepsy with erysipelas, gastric fever, maniacal exhaustion, ditto with bronchitis, each 2; apoplexy, bronchitis, cancer of uterus, congestion of brain, epilepsy with peritonitis, hydrothorax, dysentery, peritonitis, gangrene of lung, pneumonia, umbilical hernia, and typhomania, each 1. No case of suicide or other untoward event occurred in the institution amongst the inmates during the year, which speaks for itself as to the great vigilance and constant attention that must have been called into requisition on the part of the officials generally, though, had anything of the kind taken place, it would not have followed that either one or the other was neglected. Three of the females attempted suicide unsuccessfully, by cutting the throat, strangulation, and drowning (in a bath), respectively.

We observed, in preparing our notice of the Commissioners' Report, as embraced in this Review, that no mention whatever was made in it of the Colney Hatch Asylum; neither of Hanwell nor of Bethlehem, which struck us as both remarkable and unaccountable,—all three, it might naturally be supposed, being special objects of their visitation, and observation accordingly, in their official retrospect of the year. This lache, however, so far as Colney Hatch is in question, is made up for in the "Report of the Committee of Visitors," now before us, in which we have a lengthened official inspection of the Asylum recorded as made by four of the Commissioners, who certainly have been far from sparing in their animadversion upon the management of the Asylum in several important respects; but, unfortunately, our limited space will not permit us to give their remarks in any but the most condensed way, as follows:—The ventilation is objected to as imperfect in some of the dormitories, the new single rooms, padded rooms, laundry, dining-hall, and passages. The asphalte pavement is recommended to be substituted by a wooden flooring, and the gas-burners and pipes to be made less facile for suicide. The washing accommodation is pronounced to be very insufficient. The furniture, as far as respects the seats and tables for the new wards, is stated to be of "heavy construction." The clothing is condemned for want of neatness; and, what must assuredly be of rather a burlesque and grotesque character, but all the more appropriate, perhaps, in such an institution, the worthy Visitors think, the boy patients, who are pretty considerable in number, are forced to wear the clothes and stockings of men! The patients,

many of them, were unoccupied, listless, and not a few sitting or crouching on the ground. The introduction of cheap publications, games, prints, and objects of interest, in all the galleries, is suggested, as well as that the ground occupied in crops, and these crops reaped by hired labourers, should be converted into gardens, and worked by the patients. Some of the airing courts are condemned for their roughness; and "the north airing-ground," in particular, is stated to consist altogether of very steep and large mounds of rubbish, unfit for any purpose whatever, together with being not free from danger to the patients. The gardens of the institution are, it appears, not accessible even to the medical officers of the Asylum, which is a most extraordinary and inexplicable restriction, and palpably bad and unjustifiable. The dietary and system of cooking is much censured. The inspecting Commissioners express their satisfaction that the salaries of the principal medical officers had been raised to £500 per annum, their former salaries having been "very small," as was the case, most undeniably, for the onerous duties required of, and performed by them; and, even at present, are only an approximation to what they should be, the absolute slavery of their office being such that a remuneration of £1000 a year would not be an over-liberal allowance. And, lastly, the report of the four Commissioners observes:—

"We satisfied ourselves that their power (that of the principal medical officers) throughout the Asylum is not such as is confided to medical superintendents in general. We think that it should be increased, and, especially, that they should be allowed a discretion to expend, from time to time, certain limited sums for the benefit of the patients, as is the case in many other Asylums."

This is excellent advice to the Visitors, but which, we apprehend, they are not likely to act upon, as, from their angry and captious reply to this, no doubt well-merited, castigation on the part of the Commissioners, they would appear determined to be self-willed, and to act on the principle of all unreasoning and unreasonable autocrats—*sic volo, sic jubeo.* Their "steward" would appear to be their right-hand man, for we perceive that their reply to the Commissioners is largely interlarded with a report made to them by him in exculpation of the charges contained in the Commissioners' heavy bill of indictment; but not a line or word is given of the Reports of the Medical Superintendents, which, we take for granted, they also were called upon to furnish, as well as "their steward's;" the Visitors stating that they had "referred the entry made by the Commissioners, in the Visitors' Book, to those officers to

whose departments their observations especially refer." But, throughout, those "clothed with a little brief authority" in that insane colony, Colney Hatch, have manifested a disposition of puerility of mind towards the chief officers, the Medical Superintendents,—a line of policy but ill calculated to further the interests of that overgrown establishment, wherein everything should have been done to uphold them; and the "steward," instead of being exalted as he has been, and paid a salary nearly as large in amount as that of the superior officials, £450 per annum, should, with the other secondary functionaries, have been made to look up to them as the heads of the establishment, vested with "paramount authority" for the benefit of all within its walls. This is the real secret of similar institutions working, as they do, satisfactorily in every respect,—neither Visitors nor "their stewards" overstepping their own proper duties, or attempting to lord it over those whose high and important functions should be their passport to every respect and consideration. There is one redeeming point, however, in this "Report of the Committee of Visitors," which is worthy of especial note and commendation, namely, that its contents, though so largely filled with the lucubrations of the Visitors' "steward," are not rendered more supremely ridiculous by the bombast and *persiflage* of a matron's, as is the case in the annual Reports of the "Committee of Visitors" elsewhere.

8. The twenty-second Annual Report of the Suffolk County Asylum, by Dr. Kirkman, its eminent Physician-superintendent, is a valuable and well-written document, containing very enlarged views, and those of a more than ordinarily suggestive character, which might only be expected, emanating as they do from a gentleman who, it appears, has reached "the standing of the oldest medical superintendent in England in years, and the longest in asylum management." In this Report we have a concise and interesting account of the rise and progress of the Suffolk institution, which has now been in operation thirty-three years, and has ever maintained the highest position amongst kindred establishments. Dr. Kirkman has some most judicious remarks in regard to the communication of religious truths to the insane patient, and shows incontestably that the periods at which such may be ventured upon are frequently "sudden, and perhaps unexpected, periods—only, probably, of a few minutes' lucidity—that the word can be spoken in season. Such periods, and such a season, can only be known to the Christian physician in his daily intercourse with his afflicted charge."

The patients are stated to have been healthy during the year, and to have "enjoyed, as usual, extended liberty, including a very pleasurable visit of many of the females to the seaside. In addition to their usual Christmas festivities, a lecture on elemental philosophy and chemistry, accompanied by instructive experiments, was given to them by the assistant medical officer, Dr. Wm. P. Kirkman." This is a humanizing system of management, and cannot be too highly extolled. The number of patients in the Asylum at the end of the year amounted to 312 (131 males, and 181 females). The discharges in cured were 56, relieved 3; and the deaths were 35, the causes of which were:—Exhaustion, maniacal, &c., 12; phthisis, 7; paralysis, and general ditto, 4; cardiac disease, 4; epilepsy, 3; apoplexy, 21; bronchitis, chorea, and peritonitis, each 1. Several of the death casualties of the year, it appears, occurred with patients who were admitted in a nearly dying state—a condition, in which the insane are too often sent to an asylum, and as if only to add to its mortality.

The dietary of the Suffolk Asylum may be given as follows:—Breakfast—6 oz. of bread, with gruel made of groats, 10 lbs. to 8 gallons of milk. Dinner:—Sunday—bread, 8 oz.; cheese, 1½ oz.; beer, 3 naggins. Monday and Thursday:—Suet dumplings and rice puddings, 1 lb. each, with beer, 3 naggins. Tuesday and Friday:—Meat, 6 oz.; bread, 4 oz.; and beer. Wednesday and Saturday:—Soup, from Tuesday, with 2 oz. additional of meat; bread, 7 oz. Supper:—Sunday, Tuesday, and Friday—bread, 8 oz.; butter, ¾ oz.; tea, 3 naggins. Monday, Wednesday, Thursday, and Saturday—bread, 8 oz.; cheese, 1½ oz.; beer, 3 naggins.

On the whole, we are of opinion that the above scale of dietary is not as generous as we would have expected in an English asylum, especially as regards butcher's meat; and but 6 oz. of bread being allowed for breakfast, with the "gruel," is scant enough fare as a foundation for the day. Vegetables are only served on two days in the week, Tuesday and Friday, which is scarcely sufficient.

The year's expenditure amounted to £6,367 17*s.* 3*d.*, which was small, as compared with English asylums generally. In the year's outlay we are glad to perceive there is no mention of tobacco, that poison of mind and body, which is still countenanced, we regret to have to say, in so many asylums, though otherwise so well and creditably conducted.

9. Dr. Skae's annual Report of the Royal Edinburgh Asy-

lum, for the year 1859, informs us that the number of patients under treatment that year was 858 (460 males, 398 females), of whom were discharged 125—viz., cured, 68 (28 males, 40 females); and uncured, 57 (34 males, and 23 females); and that the deaths amounted to 60 (43 males, 17 females); which left remaining under treatment at the end of the year, 673 (355 males, 318 females). The causes of death were:—Phthisis, 20 (11 males, 9 females); general paralysis, 12 (males); disease of kidneys, 5 (3 males, 2 females); disease of brain, 3 (females); dysentery, 3 (males); epilepsy, 2 (1 male, 1 female); cerebral effusion, 2 (males); maniacal exhaustion, 2 (males); pneumonia, 2 (males); apoplexy, 1 (male); hemiplegia, 1 (female); empyema, 1 (male); gangrene of lung, 1 (male); morbus cordis, 1 (male); pericarditis, 1 (female); gastric ulceration, 1 (male); cancer of stomach, 1 (male); disease of liver, 1 (male). A very carefully drawn up statement is given in an appendix of the pathological appearances observed in the brain, in the several post-mortem examinations, viz., 36, which were made during the year; and from which we learn that the grey matter was pale in 1 case of acute mania, 1 of dementia, and 5 of general paralysis; violaceous in tint in 1 case of hypochondriasis, and 1 of general paralysis; softened in 2 cases of dementia, and 7 of general paralysis; and atrophied in 2 cases of dementia. Dr. Skae states, amongst the causes of the admissions of the year, six arose from religious excitement; three of which were attributed to the "Revivals". "In one, a female," he goes on to say, "revival meetings had been regularly attended for a week. Another female had attended only one lecture by a well-known revivalist preacher. The third case was a male, who had attended no meetings, but had pored over the newspaper accounts of the 'Revivals,' until he ultimately experienced some violent paroxysms, which, he said, were 'the coming of God on him.' He became convulsed, the convulsions increased in severity, and his whole body was distorted. Violent excitement, and incessant restlessness, continued up to the time of his death, which occurred in nine days after his first seizure, death taking place during a convulsive attack."

The employment and work executed by the inmates of this well and humanely conducted institution, are varied and considerable. But it is not "all work and no play;" for we find that the recreations and amusements are quite in keeping with the spirit of the age in these important respects. Besides the stated recreations, there are regular intellectual reunions

amongst the patients; and lately there has been instituted a weekly club, where a paper is read by one of the members, which affords a source of much enjoyment and improvement to all capable of participating therein.

The average daily number of patients in the Edinburgh Asylum is reported as 666; and, for their due care and superintendence, there is one resident physician, at a salary of £497 10*s.* (this odd sum is curious, why not make it £500?) with three assistant-physicians, at salaries (wages we should rather say) respectively, of £65, £42, and £21 17*s.* 3*d.* (fractional parts again). This only moderate staff bears a remarkable contrast to that of Colney Hatch, which latter institution, with nearly treble the number of inmates, has but five medical officers altogether,—two chiefs, and three assistants. But the wretchedly small remuneration given to the assistant medical gentlemen of the Edinburgh Asylum (each, be it observed, a graduate in medicine), is most discreditable to the managers of that institution, who ought to remember that "the labourer is worthy of his hire." We referred to this last year, when noticing the Report of the Scotch Commissioners in Lunacy, who animadverted strongly upon such inadequate payment on the part of an establishment whose "revenue was in a very satisfactory condition." The only result, to the present time, of this well-merited rebuke of the Commissioners, is, that the splendid addition of seventeen shillings and threepence has been made to the scant "wages" of the junior assistant-physician, which hitherto stood at the surprisingly large figure of twenty-one pounds per annum!

10. We are not often favoured with the Reports of the Glasgow Royal Asylum, which, however, "maketh no matter to us," as regards it or such institutions generally, further than that we conceive medical superintendents should feel it their bounden duty towards the Profession to afford the results of their charge, by transmitting copies of their reports to each of the professional journals taking an interest in their contents, and which it is so desirable should be ventilated freely, and not kept as sealed books, as is too much the case, from the sparse manner these printed reports would appear to be distributed for the benefit of the general body of the Medical Profession. The state of this large and well-circumstanced establishment, at the close of the year 1859, was as follows:—

	M.	F.	T.
Remaining on Dec. 31, 1858, .	249	255	504
Admitted since, ...	115	89	204
Total, . . .	364	344	708
Discharged, cured, ...	41	41	82
Do., relieved, ...	33	40	73
Do., not improved, . .	3	1	4
Died, ...	21	28	49
Total, . . .	98	110	208
Remaining, Dec. 31, 1859, . .	266	234	500
Total treated,	364	344	708
Average daily number, . .	266·18	247	513·18

The cures effected during the year amounted, it is stated in the Report of the Directors, to "between 40 and 50 per cent.," which we cannot find borne out by the above numbers, 82 being given as the number "cured," which, divided amongst the average number of patients resident throughout the year—the usual method of computation, and the fairest in such matters—would fall very far short of "between 40 and 50 per cent."—in fact, be only 16 per cent.

Dr. Mackintosh, the eminent and experienced Physician-superintendent, makes some very sensible remarks in his judiciously drawn-up report, respecting the dismissal of certain classes of—suicidal, homicidal, &c.—patients, observing:—"What probation should they undergo before liberty be granted to them? For although they may have appeared to be completely recovered, yet it has been afterwards discovered that immediately, if not before, they passed the gate, their malady had returned; and that it had, probably, been caused by the very little excitement of preparing to leave the Asylum; thus showing, that although they might have appeared quite well, and, as it were, deceived every one, including themselves, as to their real state, yet that they were utterly unfit to bear, far less able to contend against, the annoyances and irritations of the external world."

Of the causes of death during the year, the largest number arose from disease of brain, 12 (8 males, 4 females); 10 (3 males, 7 females), from exhaustion (maniacal?); 7 (5 males, 2 females), from epilepsy; 5 (4 males, 1 female), from apoplexy; 5 (females), from phthisis; 3 (1 male, 2 females), general para-

lysis; 2 (males), disease of heart; 1 (female), dysentery; 1 (female), enteritis; 1 (female), disease of stomach; and 1 each (males), of peritonitis and phrenitis.

A very full and interesting account is given of the most remarkable, persistent, and varied attempts at suicide on the part of one of the deceased males, who ultimately died of apoplexy, but who required, till death occurred, the unremitting attendance of two or three attendants to prevent his suicidal propensity being effected. His principal delusion—one so common amongst the insane—was, that he had committed the "unpardonable sin;" and that the sooner he destroyed himself the better. Dr. Mackintosh goes on to say of this case:—"Nothing could exceed the pertinacity of his efforts, by every possible means, to destroy himself. He attempted to suffocate himself by stuffing things into his mouth, by holding his breath, and grasping his throat; by burning; by dashing his head against the wall; by starvation; and, in short, by all and every means he could think of. Finding that he could not thus attain his object, he next attacked his fellow-patients, with the view of provoking them to kill him."

Of the apparent or supposed causes of insanity of the cases admitted during the year, "intemperance and hereditary disposition" produced the greatest number, each being 27; "previous insanity, 20; religious excitement, 10;" &c., &c. Dr. Mackintosh has the following judicious observations touching "previous insanity" as an immediately exciting cause:—"The susceptibility to mental disease induced by previous attacks is universally acknowledged. A person may suffer from a severe attack of mental aberration, recover, and remain in the full possession of his faculties during the subsequent period of his life. Such cases are met with, and have occurred in our own experience. After one attack, however, there is always a tendency to a recurrence of the malady, and even in cases where no hereditary taint can be traced. The brain once affected has received a shock, and has become susceptible to impressions unfavourable to its healthy exercise, and is apt to succumb under the operations of causes which, in other circumstances, it would have steadfastly resisted."

The expenditure during the year was £18,819 2*s.* 6*d.*, the largest items being—butcher's meat, £3,214 3*s.* 9*d.*; wages, £2,161 11*s.* 8*d.*; salaries, £942 7*s.* 0*d.*; wine, spirits, and malt liquors, £903 2*s.* 5*d.*; groceries, £862 0*s.* 11*d.* No mention, directly at least, is made of tobacco, in any shape, in the outlay of the year; so that we hope Dr. Mackintosh is of the number of medical superintendents who discountenance the use of this hate-

ful weed. We must observe, in the language of praise, that the Assistant-physicians of this Institution are remunerated in a manner something befitting their professional position, each being paid a salary of £100 per annum, which is an example worthy to be followed the sister institution of Edinburgh. Another most commendable feature in the management of the Glasgow Asylum is, that the Physician-superintendent takes his place at the meetings of the Board of Governors, not as a matter of sufferance merely, but as a matter of right, by the standing rules of the Asylum. This is just as it should be, and, instead of being the exception, ought unquestionably to be the rule in every public asylum,—it only being a matter of justice, and for the due welfare of the establishment, that its responsible and chief officer should be present to advise, but not, of course, to vote with, the Board, on behalf of the interests of his patients. Boards would lose nothing in dignity by this course, whatever, on the contrary, they would add thereto.

In now closing our necessarily brief analysis of the Glasgow Asylum, we feel bound to say that its management reflects the greatest credit on Dr. Mackintosh, its excellent and experienced head.

11. The first paragraph in the Report of the Worcester Asylum, for the year 1858, that for 1859 not having been yet received, is to the following effect:—"Your Committee continue to feel the same confidence in Dr. Sherlock, as they have always had, as well as their admiration of the ability, attention, and zeal, which he displays in the management of the business of the Asylum, and in the care and treatment of the patients." This prominent testimony to the professional and official conduct of Dr. Sherlock is highly creditable, and speaks well for the good feeling which must exist amongst all parties intrusted with the direction of an institution in which it is of so much moment to the best interests of its inmates, that perfect harmony, gentleman-like bearing, and the fullest confidence should subsist on all sides, otherwise disastrous effects will sooner or later be manifested, and the unhappy patients themselves feel the irreparable consequences thereof.

From Dr. Sherlock's own portion of the Report we make the following extract, as interesting and practical:—"The amount of personal liberty which is now generally accorded to most patients in asylums renders their occasional escape not unfrequent, and much greater injury to the majority would result from establishing a strict code of regulations as would render such a contingency impossible." And yet Dr. Sherlock is sub-

ject, at any time, to be mulcted in the penalty of twenty pounds for the escape of one of his patients; for such is the spirit and letter of the law for the regulation of the care and treatment of lunatics in England; as if it were within the limits of things possible, that any one in the responsible and confidential position of a medical superintendent would connive at, or in anywise be instrumental in the escape of one of his patients! The existence of such a penal provision, with others, in the English Lunacy Act (8 & 9 Vic., ch. 126,)—and re-introduced into the English Criminal Lunatic Act of the present year, as we have already referred to—is exceedingly preposterous, besides being most gratuitously insulting, and humiliating to professional men holding important public situations, and only too well calculated to lower them greatly in the eyes of their subordinates,—if not, in fact, a strong temptation to those very subordinates, if disposed to be revengeful and malicious, to aid and assist patients in their immediate charge to escape, so as to bring the superintendent into trouble, and suffer pecuniary damage. Dr. Sherlock enters largely and ably into the question which, of late, in particular, has been occupying much public attention—that of insanity being on the increase, and which, in his opinion, is entirely groundless. We are unable to find room for the proofs he adduces in support of this opinion, but which appear to us very satisfactory and convincing.

The general results of the year were as follows:—

	M.	F.	T.
Total under treatment during the year,	197	213	410
Of whom were discharged cured, . .	12	19	31
Do. do. relieved, .	4	2	6
Do. do. unimproved,	1	0	1
Died, ...	15	13	28
Number remaining at close of 1858, .	32	34	66
	165	179	344

Fourteen of the deaths arose from disease of the brain, and other central nervous masses; six from gradual exhaustion; four from phthisis; and four from asphyxia by drowning, disease of kidneys, phlebitis, and enteritis respectively.

The year's cost for maintenance was, £8508 19*s.* 11*d.*, and no expenditure apparently, in tobacco, which is another very commendable feature in Dr. Sherlock's system of management.

12. Having already, in our review of the English Commis-

sioners' in Lunacy Report, adverted pretty fully to St. Luke's Hospital, we have little more now to do than refer shortly to its own official reports for the year 1859. In them is contained a long list of the Governors, who amount to 181. Next we have a report from the General Committee of Governors for the year 1859, in which are lamentations unmistakeable in respect of the falling-off of applications for admission into the hospital, even though so much less stringency had been in operation in regard to the reception of inmates. On this head, the Report states:—

"Your Committee have to express their regret that, notwithstanding their endeavours to make known by advertisement, and otherwise, the advantages offered to the public, by the Resolution of the Annual General Court of 1858, which sanctioned the admission of curable patients at £1 1*s.* per week, the number of that class of patients has diminished during the past year. The number of ordinary applications for the admission of patients has also been less."

This is a sad enough plight to have been brought to; but the Governors do not appear to have kept in mind the weighty truth that those having "sown the wind shall reap the whirlwind." They would not heed the warnings and admonitions of the Commissioners in Lunacy, but resolutely bade defiance to them; and now they are feeling the consequences thereof, and for which we have no sympathy to offer them, or other advice than to bow with submission to the fate which is awaiting them,—a fate, too, of a most righteous description. We need say nothing further of St. Luke's, on the present occasion, than that the average weekly number of patients in the hospital during the year 1859 was 141 (51 males, 90 females), and that the expenditure incurred was £4,758 0*s.* 2*d.*, with the details of which the worthy Governors have not been pleased to favour us in their lugubrious Report, which we now take our leave of.

13. A very remarkable feature in the report of the Omagh District Hospital for the Insane, a copy of which has only now for the first time appeared on our editorial table, is, that it publishes the names and residences, in full, of all the patients in the establishment up to the 31st of March, 1860; the same of all admitted during the year; ditto of all the re-admissions; ditto of those discharged recovered, improved, and unimproved; ditto, of pay patients; ditto, of escapes; and ditto of the deaths. We have also a list, in the minutest detail, as to name, &c., of the

several attendants, nurses, assistants, even to that of the post-boy; and, further, the names of the respective contractors, the articles supplied, "foolscap" into the bargain, together with tobacco, snuff, and pipes, the latter at the extravagantly-high price of fourteen pence per 12 dozen.

This Report should be entitled "the book of the chronicles of Omagh," as regards insanity, for such it assuredly is to all intents and purposes, and quite an original of its kind, inasmuch as in our lengthened experience and varied acquaintance with insane "annuals," of every hue and complexion, and from all lands, we never before met with the peculiarly personal particulars, in respect of the inmates of an asylum, as is contained in the one before us. Now, may we be permitted to ask the *cui bono* of all these details, so tiresome even to look at; so altogether uninteresting and unnecessary, besides so much misspent labour and time in copying out such lists, and also wasteful expenditure in printing them; but, greater than all, so much needless exposure of those whom Providence has been pleased in his inscrutable wisdom to strike down to the ground with a fearful affliction,—one over which a veil, as far as possible, should be drawn, instead of this open and uncalled-for publicity, remembering always the pitiful appeals of those so afflicted, speaking to us, as it were, in such accents as "Have pity upon me, have pity upon me, O ye my friends; for the hand of God hath touched me." We observe the names of several peers in the list of governors; and, in all earnestness, we ask them how would they feel if a wife, or a sister, or a brother, were gazetted thus as the subject of madness? The answer is plain. And have not each and all of those inmates of their asylum thus held up, in the most offensive and insulting manner, to public gaze, their relations, with feelings as acute and sensitive as the highest in the land—and should not those feelings, as well as those of the patients themselves, be duly respected? We trust it is only necessary to call attention, as we now have felt it our bounden duty, to this matter, in order that Dr. West, the excellent and humane physician-superintendent, may no longer be coerced to be a party to this publishing of particulars of so delicate a kind, and to this "hue-and-cry" system of reporting, which would be so much better in the breach than in the observance; and that we shall be enabled, in our next annual review in connexion with "Insanity, and Hospitals for the Insane," to state that the expurgation we have recommended in the Omagh Report has been carried into effect.

The first page in Dr. West's Report has reference to a sub-

ject which has occupied a large share of public attention during the last eighteen months—namely, the so-called "Revival movement," which had its commencement in Ulster, and to which we have already made some allusion in the course of this review. His observations being very important and interesting at the present time, and coming before us thus authoritatively, we give them in full:—

"Before entering upon the report of the proceedings in connection with this asylum for the past year, I wish to make a few observations on the Revival movement, or, more properly speaking, upon a few of the twenty-six cases admitted into this asylum, and which were attributable to that movement as being the exciting cause; and adding a further proof of the utility of such institutions, provided advantage be taken of them in time, but which I regret to say has not been the case in all instances requiring aid. In corroboration of which I may state that I have heard from a person, on whom the strictest reliance may be placed, that several cases of insanity, which were said to be caused by the Revival movement, terminated fatally, the patients having been kept at their homes by their friends, probably with a hope that each succeeding day would bring with it some symptom of returning reason.

"With one exception, in all these cases in which religious excitement has been given as the proximate cause, there was a predisposition to insanity, either from their having had previous attacks of that malady, or from its having been hereditary.

"The exceptional case was that of a man who, at the time the movement occurred, had hardly recovered from an attack of low continued fever, during which his head had been very much engaged. The excitement and want of rest caused by his attendance at these meetings were too much for his constitution, already so much weakened, to bear with impunity; and the consequence was, in the course of a short time, his mind gave way, and he was at length admitted into the asylum, being at the time one of the most violent cases of acute mania I ever saw or had care of. He fancied himself the Lord's Anointed, and with the greatest difficulty could be prevented stripping his clothes off, 'for the purpose,' as he said, 'of dancing before the ark.' This poor man was quite restored to his reason in the course of a week by merely procuring him sleep and quietness; but owing to the weakened state of his constitution from his previous illness, as well as from the exhaustion produced by the maniacal excitement, we were obliged to detain him in the asylum until his health became quite restored. I have lately been told that this man has continued perfectly well in his mind since he was discharged, having carefully avoided those religious meetings, or anything which might be likely to excite him.

"Another case was that of a woman, the mother of ten children, who had had an attack of insanity about three years previous to that which was caused by her attending the Revival meetings,

which she continued to do until within three weeks of her admission to the asylum. This poor woman was then observed to have both her eyes very much injured, and also the fore-finger of her left hand. Upon inquiry it was found that, in her mistaken zeal for religion, she had attempted to pluck out both her eyes, as being offending members; and when restrained from effecting her purpose, she, with the same object, bit her finger so severely that it was then in a state of sphacelus, or death from mortification, which was then rapidly extending up her arm; and although all was done by the visiting physician which possibly could be to arrest its progress, it terminated fatally on the fifth day after her admission.

"The history of the other Revival cases would also be found very interesting in many respects, if time and space would permit me to give them. But I shall merely add here, that I never felt so much the responsibility of my position, or passed so anxious a time, as during the care of some of these cases, four of which died, twelve still remain in the asylum, and ten have been discharged recovered."

We have only to add to the above, that undeniable official records show that the number of cases of insanity in Ulster, arising out of the "Revival" there, and admitted into the public asylums of that province, amounted to 67, which surely ought to be a warning to those who fanned this flame of unholy zeal and excitement, to "consider their ways," and for the time to come to "ask for the old paths, where is the good way, and walk therein."

The next quotation we shall give, refers to the results of the year, as to admissions, &c., viz.:—

"Admissions, discharges, &c., during the year ended 31st of March, 1860.

	M.	F.	T.
In Asylum on 31st March, 1859,	127	120	247
Admitted to 31st March, 1860,	65	72	137
Total,	192	192	384

Discharged:—

	M.	F.	T.			
Recovered,	26	24	50			
Relieved,	7	8	15			
Unimproved,	9	11	20			
Escaped,	4	4	8			
Died,	10	15	25			
	—	—	—	56	62	118
Remaining in Asylum 31st March, 1860,				136	130	266

The principal causes of the deaths were, exhaustion, 9; phthisis, 6; bronchitis, 3; and other causes, 7. The years' expenditure was £5,174 18*s.* 2*d.*, of which £30 4*s.* 6*d.* was for tobacco and snuff! No solid meat is allowed,—the dinner on "five days each week," being soup (1 pint) and bread (12 oz. males, 8 oz. females); "Fridays" new milk and bread; and one day in the week *nil*, at least so we conclude from the diet table, but *six* days being provided for in it. The breakfast and supper consist of "porridge and new milk." We would, therefore, beg to recommend an intercalary dinner day, and to allocate the money laid out for tobacco towards meeting its expense, as being much more needed for the patients.

14. The Report of the Aberdeen Asylum for 1859, is very satisfactory in its several details, which are all given with much minuteness and accuracy, as well as clearness, excepting its dietary, which is still withheld, very unaccountably, an omission to which we felt it our duty to call attention in our review of last year. The total number under treatment during the year amounted to 374—172 males, and 202 females. The recoveries were 42; the relieved, 12; unimproved, 4; and the deaths but 9, which was a surprisingly small mortality, and speaks well for the sanitary arrangements, &c., of the institution. The cost of maintenance was £6,452 2*s.* 10*d*, and in this we are happy to see that nothing is embraced for tobacco. In connexion with the period of time necessary for treatment, Dr. Jamieson observes:—

"The average duration of treatment in the recovered cases, involving a period of trial and confirmation of convalescence, was, even under all the favouring circumstances of asylum arrangements, not less than nine months—a statement suggestive of the amount of anxiety, tedium, expense, and disheartening influence attendant on the protracted domestic endurance of most of such cases, and of the great advantage of such an institution for all grades of the mentally-disordered."

On the important subject of recreation, Dr. Jamieson states:—

"The patients have had their usual, or even greater amount of liberty and amusement, both within and without the walls. A large cricket park has been laid out during the past year on the Bark-mill ground, and has already been the arena of many well-contested games. Frequent parties have been formed for concerts, golf, fishing excursions, visits to the country, and occasional walks into town; whilst several of the inmates have spent evenings from time to time in the houses of relatives and friends."

Here we must close our notice of the Aberdeen Asylum, whose general management, however creditable and liberal, would be still further enhanced by the particulars of its diet table being given for the future in the Report, otherwise so complete.

15. Not the least important part of the Report of the Belfast District Hospital for the Insane, for the present year, is the full account it contains of an official visit paid to it, at the close of last year, by Mr. Cardwell, M. P., our very efficient Chief Secretary for Ireland. That visit had reference to the best means of increasing the accommodation, so badly required by this Institution, it being in a very overcrowded state for some time past, with a large number of outstanding cases unable to be received from this cause, much to their detriment, and greatly decreasing their chances of cure by this unavoidable delay in their due treatment. Mr. Cardwell would appear to have taken every pains to acquaint himself on the spot with the views of the local authorities in respect of the course that should be adopted for affording such accommodation as would both immediately and prospectively answer the wants of the insane poor of all classes in the counties of Antrim and Down, the two counties embraced in the Belfast district. The unanimous recommendation of the very large number of Governors (presided over by the Bishop of Down) who met Mr. Cardwell was, that "the existing Institution should be kept for the reception and treatment of all recent and probably curable cases; and that another, and a totally distinct one, should be erected in a convenient locality, for all the chronic and probably incurable cases at present occupying the principal portion of the existing building, together with the large number of idiotic and other patients so badly circumstanced in the different Union workhouses and gaols of the district. This lengthened and influential meeting terminated thus:—

"Mr. Cardwell—I am quite aware of the great importance of what you have said, gentlemen. If you had increased accommodation for patients, they would not be either in your jails or your workhouses. What you wish the Government, then, to do is, that measures should be taken in the present state of the laws to supply such additional accommodation as would prevent the insane of any class being sent either to your work-houses or jails. You object also to the mode of government for Irish Asylums which has passed the Select Committee of the House, and you desire that that recommendation should not at present be carried out, while other deficiencies which

you have pointed out might be remedied under the present state of the law. I also understand you to say that, if there should be any increase of building accommodation for the reception of patients, it should be devoted to the purposes of a better classification, by withdrawing the harmless and chronic patients to an auxiliary institution, and not as a separate District County Asylum. I think, gentlemen, these are your views.

"The CHAIRMAN—Precisely, sir."

The results of the year's treatment, ended 31st of March last, were as follow:—

	M.	F.	T.	M.	F.	T.
In House on 1st April, 1859, ...			...	198	159	357
Admitted since, New Cases, .	48	67	115			
Relapses, . . .	3	2	5			
	—	—	—	51	69	120
Total under Treatment during the year, . .				249	228	477
Discharged, Recovered, . . .	34	41	75			
Do., Relieved, . . .	9	13	22			
Escaped, ...	1	0	1			
Died, ...	17	8	25			
	—	—	—	61	62	123
Remaining under Treatment on 31st of March, 1860, ...				188	166	354

Daily average number of patients during the year, 358·97.

The general health of the inmates during the year is stated to have been very satisfactory, with an entire freedom from any epidemic illness; and the mortality was unusually small, being under 8 per cent. The cures were 21 per cent, taken on the yearly average of patients. The causes of the deaths which occurred during the year were:—

"Paralysis, six (males); general debility and gradual decay, four (three males, one female); epilepsy, three (males); exhaustion from continued acute mania, three (two males, one female); pulmonary consumption, three (one male, two females); apoplexy, two (one male, one female); cancer of hand, one (female); erysipelas of head and face, one (female); intestinal perforation, one (female); cerebral disease, one (male)."

Amongst the causes above stated is one under the head of "intestinal perforation," the particulars of which were very remarkable, and are thus recorded in Dr. Stewart's report:—

"Three days prior to dissolution occurring, this patient was in the enjoyment, apparently, of her usual health, and taking her food

regularly, no complaint of illness of any kind having been made on her part. On retiring to bed at the time above mentioned, she was soon after heard moaning loudly, which, attracting the attention of the nurse of her division, she lost no time in giving notice of her condition, which was attended to without delay; but all efforts at affording her any relief were unavailing, she, after enduring great agony for three days, succumbing to the attack. On subsequently making a *post-mortem* examination, the cause of death and severity of the symptoms were sufficiently manifest; for in the stomach and the course of the small intestines were found pieces of iron, portions of linen rags, two large nails, part of a tobacco pipe, several strong spines of the blackthorn, and five inches in length of a knitting-needle, with which the perforation was caused, besides a miscellaneous collection of debris, that evidently must have been swallowed for a considerable time, thus making it a matter of the greatest astonishment how life and apparent health had been continued under such extraordinary circumstances as the *post-mortem* brought to light. Her age at the time of death was forty-seven years, twelve of which she had been an inmate, and throughout a most impulsive, violent, and turbulent character, and of constantly destructive habits, as regarded clothing, bedding, &c., as well as being quarrelsome to a degree. Without any provocative cause, she would suddenly strike the person next her, and severely thump herself besides, and then scream and roar in a manner appalling to the ears, even of those well-accustomed to such outbursts and violences of the insane. Nothing was known of her previous history, further than that her occupation had been that of a domestic servant; but she could never be induced to engage herself in any employment here, however simple, finding pleasure only in sitting in the corner of the day-room or airing-court, with her apron thrown over her head, and scolding, &c., in the most outrageous manner, if interfered with in this her favourite posture."

Another remarkable occurrence of the year was the re-admission of a female patient after eighteen years' perfect convalescence,—"thus showing," Dr. Stewart observes in connexion therewith, "the liability to a relapse of this malady, even after years of continued and entire freedom therefrom."

In looking over the tabulated statement of the supposed immediately exciting causes of insanity in the new admissions which took place during the year, we find the large number of 16 under the head of "religious excitement," 2 of whom only were males, and 14 females.

It would have been very desirable, in an official Report of this kind, had it been a little more explicit touching those cases so arising, and which, we presume, must have been part and parcel of the unfortunate results of the "Great Ulster Re-

vival Movement," of which we have been hearing so much as to its "blessed" effects—effects, however, terminating just as might have been expected, in upsetting reason upon her throne in innumerable instances with the excitable and weak-minded, owing to its unhallowed novelties, and strange teachings. Under the head, too, of "Grief, Disappointment, and Anxiety," are so many as 23 (8 males and 15 females), which, if the real facts were known, would very probably be found to embrace not a few "struck" ones also.

A "brass band," we find, has been established amongst the patients of this Institution since last year, and with the happiest success, the inmates, generally, being quite delighted with so enlivening and care-dispelling a source of amusement—one which it would be so desirable to see introduced into every asylum, and carried out to its fullest extent.

Another very desirable matter, also, has been effected here since last year—that of erecting a steam-engine for pumping water for the supply of the Institution, instead of raising it, as hitherto, by the labour of the inmates, which was anything but suitable employment, being monotonous and too much of the prison character, as well as too laborious, for those the subjects of a disease admittedly characterized by debility of the general system in the great majority of cases. Employment of this kind should be discountenanced in every such establishment.

We have only further to add, that walks into the country from time to time of a large number of the patients were undertaken last year, and with the most satisfactory results,—the breathing of the open air thus unrestrictedly, and joining once and again in this manner with the human family outside, giving the patients a new ray of hope, well calculated to arouse their dormant faculties, and dispel their tormenting fears of never again being freemen.

16. We find, from the Report of the Wilts County Asylum, that an additional ward for female patients was brought into operation last spring, which has greatly relieved that department, it having been much overcrowded. The total number under treatment during the year ended 31st of December, 1859, was 459,—the males being 200, and the females 259,—thus reversing the usual order, the male sex generally having the advantage in point of number in such institutions. The following statement indicates the year's results:—

	M.	F.	T.
In the Asylum, 1st January, 1859,	146	197	343
New admissions during the year . .	46	52	98
Re-admissions, . .	8	10	18
	54	62	116
Total under care during the year,	200	259	459
Of the above were discharged:—			
Recovered, . . .	22	32	54
Relieved, . . .	5	3	8
Not improved . .	2	0	2
Died, ...	33	24	57
	62	59	121
Remaining under treatment, 31st Dec., 1859, ...	138	200	338

As usual, in Dr. Thurnam's excellent and practical Reports, there is a large number of tables contained in this one, showing satisfactorily the movements of the institution during the year; but we miss one which we think would be desirable to have to refer to in every Report of this kind, namely, the period of time each patient "discharged, recovered," was under treatment.

With reference to the death casualties of the year, which were comparatively large, Dr. Thurnam affords the following simple and unvarnished explanation:—

"Many were of persons far advanced in life, or who had been brought to the asylum in a diseased and exhausted state, whose condition, when admitted, could only be pronounced hopeless. Nearly half of the whole number, or 27, were persons of 60 years and upwards; 12 being from 70 to 82 years of age. The annual mortality, which for the previous 7·35 years has averaged 10·7 per cent., has this year been at the somewhat high rate of 16·8 per cent.; which, it may be presumed, under favourable circumstances, will, to some extent, be compensated by a reduced mortality in 1860."

Among the causes of death, the following were the principal:—Chest affections, 13; gradual exhaustion, 10; apoplexy, 7; disease of the heart and lungs, 6; cerebral disease, 4, &c.

Dr. Thurnam gives some interesting particulars respecting two of the "recovered" cases, who were in the relation of husband and wife, both having become insane from intemperance, and both discharged together,—the husband at the end of two months' treatment, and his wife after being three months an

inmate. It was apprehended that a relapse would have occurred, the fear being a return to their bad habits, as so frequently happens in such cases; but, happily, not in those, both being subsequently reported to Dr. Thurnam to have become patterns of sobriety and steadiness, and enjoying a measure of happiness to which hitherto they had been entire strangers. During the year, twelve patients left the Asylum "on trial," and none had to return, all having either perfectly recovered, or improved sufficiently with their friends to remain at large. On this subject Dr. Thurnam states, that "he was more and more convinced of the good effects of this method, in the case of many who, after recovering to a certain extent, continue in an unsatisfactory state in consequence of 'home sickness,' or who, regarding themselves as improperly detained, become fretful and irritable; or, considering their cases hopeless, cease to exert that self-control which is needful for perfect recovery." We entirely concur with Dr. Thurnam in the above remarks, and consider it would greatly tend to an increase of the recoveries of the inmates of hospitals for the insane, were the plan of sending them out "on trial" one of general adoption, and made a part of their regular system of treatment.

Dr. Thurnam, in referring approvingly to the very satisfactory working of Price's warming and ventilating apparatus, goes on to say:—

"It has of late years been proposed to dispense with any such artificial mode of warming in the construction of Asylums, and to trust entirely to open fires. It appears, however, to the Medical Superintendent that by this means an adequate temperature could never be insured; and that at night, at least, the patients would be exposed to a degree of cold which they manage to escape under the thatch of their own dwellings. If, as is most essential, well-lighted and spacious buildings be constructed for the insane, it becomes all the more requisite to provide for their being duly warmed in winter, which no number of open fires available—seeing these can hardly be afforded in every sleeping-room or associated dormitory—would secure."

Here also Dr. Thurnam (one of the first authorities of the present day in all matters connected with Asylums and their inmates) and ourselves are of the one mind. We really know of nothing of more vital importance in the every-day treatment of the insane than a comfortable and a well-regulated temperature by night as well as by day, which cannot be obtained by open fires alone. We have always advocated, in these annual reviews, the necessity of this, and we are now extremely glad to find that so highly qualified a man as Dr. Thurnam is of the

same opinion, and is enabled to act upon it. Every new Asylum should be provided with such an apparatus as that of Price's; and, being so, their usefulness will be enhanced to a much larger extent than, *à priori*, might be imagined. Had we room at command, we could dispose of it to the best account, by dipping more deeply into this excellently-arranged Report of the Wilts Asylum by Doctor Thurnam; but we must not further occupy our limited space than to refer shortly to the expenditure of the year, which was £6699 17*s.* 5*d.*, one item of which, in particular, namely, £500, as the salary to the Physician-Superintendent, is very creditable to its paymasters for comparative liberality, as a *quid pro quo* for the rendering of services for which no money remuneration almost could sufficiently compensate, and which should shame the Colney Hatch Committee in respect of the niggard spirit in which their Medical Superintendents are requited for the tremendous amount of labour and responsibility put upon their shoulders, —so great as to tax their mental and physical powers to the utmost. But we have still to lament that "tobacco, snuff, and pipes," are sanctioned to the present time by Dr. Thurnam, and that £40 were expended upon articles so entirely unnecessary, so foul, and so hurtful. Far be it from us to diminish in anywise from the comforts of the insane; we would desire to increase them more and more; but certainly not in pandering to any such injurious "comfort" as that of tobacco in any form.

17. Dr. Bushnan's *brochure*, in connexion with "Religious Revivals," takes a very just and common-sense view, professionally, of a subject which has been so much before the public for the last twelve months and upwards,—one which medical men could not pass by unnoticed altogether, the effects of these revivals having been such as to make it a matter of bounden duty on their part to point out the serious consequences arising therefrom, on the physical and mental health of its devotees: these consequences being hysteria, catalepsy, epilepsy, and insanity, either permanently, or, at the very best, of painfully tedious duration. "Facts are stubborn things:" and, unfortunately, it so happens, that there are too many such now on indisputable record to bear out the above statement as to the pernicious results of the "Revival" excitement we have been eye-witnesses of these days, in its several melancholy phases. As we have already, in the course of this review, made several references to the matters upon which this pamphlet of Dr. Bushnan so ably and effectively treats, it will be superfluous to

do more in regard to it here, than to say that its attentive perusal cannot but be productive of good to all classes of readers, especially to those who have, as we charitably hope, "out of an honest and good heart," lent themselves and their influence in support of a so-called "religious movement," which has caused so many to become the victims of insanity in its most aggravated form; and, still worse, not a few to become mothers, without knowing who were the destroyers of their virtue. Alas! alas! that the name even of religion should thus have been prostituted, and basely perverted; but so it unquestionably was; and this generation will not live to see the finale of its baleful effects.

18. We have before us the Sixteenth Annual Report of the New York State Asylum; together with copies transmitted at the same time of the 11th, 12th, 13th, and 15th, the last one we were afforded the means of reviewing being the 14th. On that occasion[a] we felt called upon to animadvert on the irregularity with which this report was furnished since the decease of the former superintendent physician, Dr. Benedict, but not with any good result; which, however, does not affect us. If superintendents are thus indifferent, and we regret to see that there is so much of this on their part, be it so; we have done, and shall continue to do, our duty, without favour or affection, as reports reach us. It is by the medical officers of the New York State Asylum, we may here observe, that the "Journal of Insanity" is edited, and with whom, we presume, rests the responsibility of its interchange with ourselves and the other medical periodicals; but, so far as we are concerned, not a single number of that journal reached us during the last twelve months—(is it still in existence?)—a journal, we may remark, that never came regularly; in consequence of which we have been obliged to strike it off our exchange list, and which will account for our heading to this article not including it in our books for review on the present occasion.

Having made the above preliminary remarks, we proceed to state that the sixteenth Report of the New York Asylum brings the operations of that large establishment, under the able superintendency of Dr. John P. Gray, to the end of November, 1858, during which year it had under treatment 784 patients, in the relative proportions of 410 males, and 374 females.

[a] Vol. xxvi., No. 52, N. S., p. 359, for November, 1858.

The number of admissions for the year was 333 (172 males, 161 females), and the average daily population, 489.

Results of the total number treated:—

	M.	F.	T.
Discharged, recovered, ...	66	48	114
Do., improved, ...	15	18	33
Do., unimproved, . . .	45	54	99
Not insane, ...	3	2	5
Died, ...	21	10	31
Total discharged and died, . . .	150	132	282
Remaining under treatment, 30th Nov., 1858, ...	260	242	502

It will be observed, by the above statement, that the deaths were remarkably few in such a community, being only 6·33 per cent. on the average daily number; but it will be also noticed that the number discharged "unimproved" was, on the other hand, unusually large, so that it is only fair to conclude that not a few of that number went home merely to die, who, had they remained in the house, would have brought the mortality up to what is usual amongst the insane, even under the most favourable circumstances, that is to say, ten per cent. at least. The causes of death were:—Maniacal exhaustion, 13 (10 males, 3 females); phthisis pulmonalis, 6 (4 males, 2 females); general paralysis, 4 (males); old age, 2 (1 male, 1 female); meningitis, 1 (male); syncope, 1 (male); abscess, 1 (female); paralysis, 1 (female); pneumonia, 1 (female); suicide, 1 (female). The instance of suicide was that of a lady, admitted for the second time, who had not hitherto manifested any suicidal tendency, and who accomplished her purpose by suspension. And, touching this casualty, we are glad to find that the suggestion we made in our notice of the Fourteenth Report of this institution[a] has been attended to in this one, by giving the particulars thereof, and not overlooking them altogether, as we found to be the case in this and other Transatlantic Reports, in reference to suicides which had occurred in them.

We have observed, with much satisfaction, that in the New York State Asylum, with an average daily number under 500, which is only about a fourth of the population within the walls of the Colney Hatch Institution, the medical staff consists of one chief, and three assistant physicians—a staff, too, that is

[a] See Number for November, 1858, p. 360.

considered in very moderate proportion for that number, those officials having quite enough of labour and responsibility on their hands. What must, therefore, be the conclusion drawn from the miserably stinted medical staff of the great English Metropolitan Asylum, which has only five medical men to conduct the general treatment of its huge mass of insanity, but that it is manifestly inadequate for the purposes intended, besides being unreasonable, we might more properly say, cruel to a degree, the imposing on five the work which would be amply sufficient for employing the mental and physical energies of three times that number at least?

Dr. Gray's Report on the present occasion is very interesting in many respects, and proves him to be well qualified to be at the head of an important institution, like that of the New York Asylum, the management of which is evidently looked after with every professional care and humanity, and quite in keeping with this age of progress. Reference is made in it to an "Inebriate Asylum," about being opened at Binghamton, for the victims of intemperance, and their due treatment, which would be an invaluable and a most needful institution to have in these countries, together with an establishment for the middle classes, the subjects of insanity, who are unable to meet the lowest rate of board of a private asylum, but who could meet the charges of one, between a public and a private hospital for the insane.

19. In our Annual Review on "Insanity, and Hospitals for the Insane" of last year, our list contained the first Report of the Select Committee appointed by the House of Commons "to inquire into the operation of the Acts of Parliament and regulations for the care and treatment of lunatics and their property," and now on the present occasion we have before us, for notice, two further very valuable Reports, since issued, on the same important subject, the contents of which, however, being so voluminous, and our remaining space so limited, that we can do little more than rapidly run through their pages.

The inquiry in question had only reference to England and Wales; but had it been extended to Ireland, it would have been most desirable, inasmuch as the "Royal Commission," appointed a few years back in regard to the insane in this country, has proved a dead letter, its composition having been so infelicitous as to have had no weight whatever with the public, and consequently its proceedings proved (as they deserved) a complete *brutum fulmen*. Indeed, before any new lunacy legislation can be attempted in Ireland, the ground-work thereof

will have to be a full and impartial inquiry before a Select Committee of the House of Commons, where alone such can be carried through with effect, and which has already been earnestly petitioned for by some of the local Boards of Governors.

To return, however, to the Reports now under consideration, we think it well, in the first instance, to give the names of the members of the Committee from which they emanated, and which were as follows:—Mr. Tite, Sir G. Grey, Mr. Walpole, Mr. Whitbread, Mr. Drummond (since deceased), Sir Erskine Perry, Colonel Clifford, Mr. Briscoe, Mr. Kendall, Mr. Horsman, Mr. Rolt, Mr. Monckton Milnes, Mr. Henley, Mr. Coningham, and Mr. Kekewich. The proceedings in connexion with the Report presented to the House on the 5th of August, 1859, commenced on the 7th of July previously, and occupied the attention of the Committee for nine successive meetings, the average attendance being eight, and Mr. Walpole chairman throughout. Amongst the witnesses (thirteen in all) examined before the Committee, whose evidence is given in this Report (containing 2448 questions and answers), were Dr. Bucknill, fifteen years the able Physician-superintendent of the Devon County Asylum; Dr. James Coxe, one of the Scotch Lunacy Commissioners; Mr. Lutwidge and Colonel Clifford, of the English Lunacy Commission; Dr. George Webster; and Dr. John Bright. The evidence of Dr. Bucknill, who spoke, it might be considered, the sentiments of his brethren generally, is pretty extended, occupying eight pages, and had reference, in a large measure, to the details of management of his institution, so celebrated for administrative excellence; such as the class of attendants employed, and their conduct towards the patients as to striking or otherwise ill-using them, on which latter head Dr. Bucknill was clear and decisive, stating that cases of deliberate cruelty were extremely rare—the exception to the rule—and did not exist to any extent in public asylums. With him the invariable practice was to dismiss, summarily, any attendant who "deliberately" struck a patient; and that proceeding in this way had a most salutary effect on the attendants, who, he observed at the same time, had duties of the most arduous and trying description to perform—in fact, "their work was so very disagreeable and onerous, that it was astonishing to him how they met with such good men who were willing to undertake it." He was closely questioned on the subject of wages, and the propriety of such being raised, in order to insure a better and more humane class of attendants. He strongly advised both an increase of wages—

which ranged in his Asylum, for males, from £20 to £30, and for females from £12 to £20 per annum—and an increase in the number of attendants, observing, very properly, that one cause of acts of cruelty occurring in asylums was putting too many patients in the charge of one attendant, which irritated and tired him, and ultimately spoiled his temper. He was decidedly in favour of asylums being founded for "middle-class patients," which, in the first instance, should be tried as an experiment, by building one or two, the expense being provided from the national funds, which, we think, was a very good suggestion. On the other hand, he entirely disapproved of pay patients and paupers being placed under the same roof, as any sensible man necessarily must. This experiment had been tried at the Gloucester Asylum, and had to be given up as an incompatibility.

Dr. Bucknill, in continuation of his important and practical evidence, stated that, at the present time, there was one matter in particular against which the Medical Superintendents of public asylums had to struggle, and owing to which they were placed in a very false position, which was the overcrowding of patients—"putting too many in a ward, and too many beds in a dormitory, and having too many patients in the same room, both by day and by night." With regard to single rooms—which, he observed, were considered by many of the patients "a comfort and a luxury"—Dr. Bucknill stated that the smallest proportion, to be satisfactory, should be a third of the entire accommodation,—just as we have observed, in a preceding part of this Review, in remarking on Dr. Lalor's paper, —to be at least provided for in every public asylum.

Dr. Coxe, in his evidence, objected, in common with Dr. Bucknill, to pauper patients and private patients being under the same roof. His evidence as to cruelties being practised towards patients concurred with Dr. Bucknill's, also, namely, that such were rare in public asylums, their occurrence being principally in private houses. He stated that the wages paid to attendants in Scotland were—to males, £20 to £30; to females, from £10 to £16. Mr. Lutwidge's examination bore principally on the duties, &c., of the Commissioners in Lunacy, and with respect to details in connexion with "Chancery lunatics." Dr. George Webster's evidence was valuable, bearing as it did on many practical points, and given by a member of our profession of much experience. He objected altogether to congregating together a large number of the insane, as in the Surrey Asylum, such being most unfavourable to their recovery; and that of 950 inmates now in the Surrey Asylum, there were not

20 that could be considered curable! In answer to Sir George Grey's question (2323), "What is the largest number of patients that you think ought to be in an asylum?" he replied—"There is a difference of opinion upon that question. I think 300, or 400, perhaps." Dr. Bright was examined almost entirely in respect of Chancery lunatics, he being one of the physicians acting under the authority of the Lord Chancellor with reference to lunatics consigned to his Lordship's care.

We next come to the final Report of the Select Committee, that presented to the House on the 27th of July last; this re-appointed committee commencing its sittings on the 17th of April, and ending on the 24th July, during which nine meetings were held, with the same average attendance of eight members, and Mr. Walpole, the chairman, as before. The names of the witnesses on this occasion, and as examined in the following order, were—Mr. Joseph Elmer, clerk in the office of the Masters in Lunacy; G. Bolden, Esq., solicitor of the "Alleged Lunatics' Friends' Society;" Dr. Hood, Physician-superintendent of Bethlem Hospital; J. T. Perceval, Esq., Hon. Secretary of the "Alleged Lunatics' Friends' Society;" and the Right Hon. the Earl of Shaftesbury, Chairman of the Commissioners in Lunacy. Dr. Hood, in the course of his evidence, suggested the appointment of ten or twelve district inspectors, in conjunction with four, instead of six, of the existing paid Commissioners in Lunacy, for the better supervision of the insane of all classes,—these inspectors to be selected, as he thought they should, from amongst the best educated medical superintendents, at salaries of £700 per annum, which would be a small increase on their present emoluments of office, such being, on an average, about £600 per annum. Lord Shaftesbury, in his evidence, objected altogether to the appointment of district inspectors, or assistant-commissioners, his opinion being, that, with some slight additional powers, and some simplification in the duties of the Commissioners in Lunacy, the present number (six) of paid Commissioners would be quite sufficient for all purposes; and that, in the event of an increased staff being requisite, it would be better, in his judgment, to add to the number of principal Commissioners, than to appoint an inferior order under the title of "District Inspectors." The questions in this last Report number 416; then follows an appendix, containing the various suggestions, *in extenso*, as offered to the Committee by the witnesses, &c.

This final report, founded on the Committee's proceedings carried on for three years, shows that the total number of the insane of all classes, including those in work-houses, and

with friends, amounted, on the 1st of January, 1844, until which there were no data to form an accurate opinion as to the status of insanity in England and Wales, to 20,611; on the 1st of January, 1858, to 35,347; and on the 1st of January, 1859, to 35,982.

Proportion of Insane to the general population in England and Wales.—The report states on this head—

"It is a melancholy fact that out of every 600 in England and Wales, one, at least, is in such a state, that, in many respects, he is incapable of managing himself and his affairs. A vast proportion, no doubt, are cases either of natural idiocy, or of mental imbecility, arising from age, epilepsy, fits, and other causes, where the maladies may be regarded as chronic or incurable. With regard to them, little more can be done by any laws, however wise, or any regulations, however prudent, than to provide the patients with such comforts as their circumstances will admit; but with regard to others, since 50, or 60, or even 70 per cent., are capable of cure, if taken in time, and carefully treated, it is certainly a matter of primary importance that our legislative provisions should be so framed as to promote the accomplishment of this desirable object."

Number of Insane in Work-houses—their deficiencies, and suggested remedies.—As regards these all-important points, the committee thus express their views:—

"The chief evil for which a remedy is required, is the detention of a large number of pauper lunatics in Poor-houses. The number of these lunatics amounted to no less than 6800 on the 1st of January, 1857; and on the 1st of January, 1859, to 7632. The law relating to this class of lunatics is, certainly, in an unsatisfactory state. By the Poor Law Amendment Act, the detention in any work-house of "any dangerous lunatic, insane person, or idiot," for a longer period than fourteen days, is expressly prohibited; and the word "dangerous" is read as applicable to each of the three classes of mentally disordered persons who are there mentioned. But, with regard to those who are not dangerous, the statutory provisions are ambiguous. On the one hand, it seems to have been contemplated by the Legislature, that all pauper lunatics should be sent to some asylum, registered hospital, or licensed house, under an order by justice, or justices; on the other hand, there are provisions in the same Act, and also in another Act of Parliament, passed in the same Session, which seem to recognize, to a certain extent, the detention in work-houses of paupers deemed by law to be insane. The consequence is, that large numbers of pauper lunatics are kept in these houses without a certificate of their mental condition, and without an order from any magistrate regarding them as

lunatics, although a large portion of such persons, especially in the rural districts, may be correctly described as harmless lunatics, who, if kept under a slight degree of supervision, are capable of useful and regular occupation, or whose infirmity of mind is consequent on epilepsy, or paralysis, or fatuity from old age. It cannot be denied that, with regard to those who are really lunatics, there is a great absence of proper supervision, attendance, and medical treatment. In some work-houses, there are not even separate wards; mechanical restraint is frequently applied, because the imperfect state of the accommodation will not admit of a better mode of treatment; in many cases the medical officers of a union cannot have the special knowledge requisite for the management of the insane; and it may generally be concluded that the special appliances of a union work-house are not by any means equivalent as to this class of inmates to those of a lunatic asylum. The state of the law, on this branch of the subject, appears to require amendment. Your Committee are not prepared to recommend that all these cases, without exception, should be removed to asylums; but they are of opinion, that no person should be detained in a work-house respecting whose sanity a doubt exists, without a medical certificate, renewable quarterly, stating that the patient is a proper patient to be kept in the work-house; that there should, if possible, be distinct wards for such patients, with distinct attendance; that the guardians of the union should specially visit such patients once in each quarter, and make a special entry, on each such visit, of their state and condition; that the Commissioners should also visit them at least once in each year, and that the same power of removing any patient to any asylum should be given to the Commissioners as that which the justices now have."

Condition of the County and Borough, or Public Asylums.—It redounds greatly to the credit of the public asylums, that notwithstanding their embarrassed condition, almost universally, in respect of being overcrowded, and otherwise impeded in their good working, that the following high testimony is enabled to be made in reference to those invaluable institutions:—

"It appears from the evidence that the public asylums are, generally speaking, so well looked after, and so carefully attended to, that, as regards them, but little alteration is required in the law. In some cases it may be a question whether they are not, in their structure, inconveniently large, whether the staff of attendants should not be increased, whether higher remuneration in some instances should not be given; and whether it might not be advisable to erect, in connexion with them, detached buildings, of a simple and inexpensive character, for the reception of imbecile and chronic patients. But these, and the like matters, require no alteration in the law, and may well be left to the visiting justices to regulate and

determine, acting in communication with the Commissioners in Lunacy and the Secretary of State."

We regret very much that the Committee have not recorded a more decided opinion than the above extract conveys against the increasing evil of the present day in respect of over-populating asylums, and this, too, under the grievously mistaken idea of such being more economical, as if the pounds, shillings, and pence view was the primary one in the estimation of "visiting justices," who, through ignorance, self-sufficiency, and parsimony, all combined, are thus sacrificing the interests of the poor and much afflicted insane, whom to leave to their continued tender mercies will indeed be nothing short of disastrous. What a burlesque, is it not, on the part of this three years' sitting committee, gravely and deliberately to say, as they have in the quotation now made, in connexion with the size, &c., of public asylums, "that those, and the like matters, require no alteration in the law, and may well be left to the visiting justices to regulate and determine, acting in communication with the Commissioners in Lunacy, and the Secretary of State;" when it is so notorious that both the latter-mentioned authorities have been again and again overridden by those selfsame omnipotent-to-do-evil "Justices," in matters of vital moment to the insane; so that nothing short of the direct and immediate interference of the legislature, as we have ourselves more than once stated, will be sufficient to stop them in the pernicious course they have now been so long pursuing with impunity. The conduct of the "Visitors" of the asylums at Colney Hatch, Hanwell, and Surrey, and this, too, under the very eye of the Government, in pertinaciously carrying out their own crude views, patently shows that they are not the parties to be longer entrusted with powers, which have proved far from propitious in their hands.

Superannuations to Medical Superintendents.— We have room but for one more extract on the present occasion from the Report, that on Superannuations, which is as follows:—

"It would, further, seem desirable to reduce the term at which committees of visitors may grant superannuation allowances to their medical officers. Their duties are so peculiar, and such painful consequences are known to result from incessant intercourse with the various forms of this distressing disease, when prolonged for many years, that your Committee believe it would tend to greater efficiency of service, if the period, which stands at present at twenty years, were reduced to fifteen."

With reference to the above recommendation, one coming

with all the potency of a very influential Parliamentary Committee, we cannot but express our strongest approval, as an acknowledgment of what is eminently deserved by public servants, who, of all others, are engaged in the constant performance of duties of the most trying, and painfully anxious nature—services, we must say, that have hitherto been but ill-requited, and in no respect appreciated as they ought and should by the public. Now, let the outer world just imagine a professional man being imprisoned, for it is nothing less, during the best of his life, with the human family, in hundreds, in all degrees of mental wreck and degradation—obliged in the discharge of his onerous duty to be, morning, noon, and night, a witness and hearer of their sufferings, real or imagined, and as far as possible a soother thereof—exposed, too, to imminent personal danger from the refractory and homicidally-disposed portion of his charge—kept in continual dread by the suicidal patients, accomplishing their object notwithstanding all his care and precautions; imagine all this, and more, being endured for fifteen or twenty years, and say, is not that man well deserving of his *otium cum dignitate*, after having been so long a benefactor to his species under circumstances, of all others, the most arduous and severe? Well might Lord Shaftesbury, in his former evidence before the Committee (and all honour be to him for the decided and powerful manner in which he spoke on behalf of the Medical Superintendents and their assistants in immediate charge of asylums), state that—

"The wear and tear upon the nervous system of the Medical Superintendents and the attendants is such, that it may be considered almost a standing miracle that so many of them can bear it for the whole twenty years, before they arrive at the period of superannuation. I have received accounts from the attendants, and from the medical men themselves; and their statements go to show that, in proportion to the whole number, there are more cases of insanity arise among the medical men who are so employed, than from any other class. The Committee can well imagine what it must be to be perpetually in the presence of lunacy, some of them in the most exalted state, and some most despondent, but never hardly to pass a night in which they are not disturbed—never to associate with others, nor to have any holiday, or recreation, or any relaxation of any kind—to be perpetually in the presence of these lunatics—it has the most lowering, and most miserable effect upon the nervous system."

Such, then, is the testimony of Lord Shaftesbury, a high authority, and a source the most disinterested as to the duties, &c., of the internal officials of lunatic asylums—which makes it need-

less for us to say more on this subject, further than that it is to be trusted, when any new legislation takes place, not only will superannuations be given, as now recommended, at the end of fifteen years, *as a matter of right*, but that also the entirely insufficient salaries of the medical superintendents, except in a very few instances, will be largely increased, and thus hold out a *bonus* for "the right man being in the right place;" and as a further inducement to so desirable an end, that it may be an understood thing that, as vacancies occur amongst the Commissioners and Inspectors in Lunacy that such be filled up from the ranks of the Superintendents. Let these only just and reasonable matters be "the order of the day" for the time to come, and the sane and the insane of all classes will be the great gainers thereby.

A Manual of Human Microscopic Anatomy. By A. Kölliker, Professor of Anatomy and Physiology in the University of Würzburg. London: Parker and Sons. 8vo. pp. 633. 1860.

The enunciation of the theory of the cellular development and structure of vegetables by Schleiden, in 1838, prepared the way for, and led to the theory of Schwann, published in the same year. Thus the doctrine that there was "one common principle of development for the elementary particles of all organised bodies; the two kingdoms of nature being intimately connected by this community in the laws of development of plants and animals," to which many facts had been tending, became established, and the "*cell theory*" of Schwann was recognised. Hitherto it had been held that all animal tissues were developed, and grew by means of a secretion, or deposit from vessels; but now it was established, that they took their origin from, and grew by means of cells, which often preceded the existence of all vessels, and were themselves strictly extra-vascular. As many vegetables were, even in their mature state, simple cells, and as vegetables of a higher class had their origin in, and grew from, a cell, which, by successive multiplications and modifications of itself, elaborated and formed the whole structures of the plant; so was it found that animals grew and were developed on the same plan; that even the highest of them took their origin in a simple cell, which, by successive multiplications of itself, gave rise to a structure out of which all the tissues and organs were developed.

This theory of Schwann's, which nearly all subsequent researches have but served to illustrate and confirm, served as a starting point, from which the sciences of anatomy and physiology have, of late years, been bounding forward with amazing rapidity towards completion. The workmen who have been engaged in carrying out the idea of Schwann have been innumerable, and the facts collected threatened to overwhelm us by their number and importance, till Todd and Bowman undertook the task of reducing them to order, and published, in 1845, their admirable "Physiological Anatomy," comparing and collating all that had been already done; expunging the results of imperfect and hasty observations; retaining what was established; and adding to the store from their own well-made observations.

Inspired and guided, we believe, by our countrymen, Kölliker undertook for the Germans what Todd and Bowman had done for us—hence the "*Gewebelehre*," which now, for the second time, makes its appearance in English,—at first, translated by Messrs. Busk and Huxley, for the old Sydenham Society; now again translated, and republished, by Parker and Son, under the general superintendence of Dr. George Buchanan.

This work differs from that of Todd and Bowman, in that it is devoted almost exclusively to microscopic anatomy. It is, says the author in the preface, "in the main, a condensed version of the second German edition (of 1855), of my 'Handbuch der Gewebelehre;' but every material addition that has been made to human microscopical anatomy, up to the present date, will be found incorporated in it. The book is, therefore, brought well up to the third German edition, that of 1859."

To give anything like an analytical review of a systematic work like this, were simply impossible. We must be satisfied with dipping into it here and there, and culling such "sweets" as we may. One point we must explain. In stating the measurements in the original, the author adopted the Paris line, equal to about $\frac{1}{11}$ (0·0888138) of an English inch,—now very generally adopted on the Continent, and in English works too, we believe,—as his unit, and used the signs ‴ for "of a line," and ″ for "of an inch." Throughout this edition, as in the Sydenham one, the same system is adopted; but in this edition no explanation of these cabalistic signs is given, which must make them puzzling enough to the uninitiated.

We perceive that since the publication of the former edition of the work, the author has modified his views somewhat,

as to the structure of cells, as will be seen in the following extract:—

"Quite recently *Donders*, in a very remarkable paper, has asserted, that all cell-membranes consist of one and the same, or at least of very closely allied, substance, which agree in their properties with the substance of *elastic tissue*. I, for my part, am of opinion, that all animal cell-membranes consist *originally* of the same material, and, indeed, of a *proteine compound;* but that, in consequence of subsequent metamorphoses, differences of composition and reaction may arise. Thus many membranes become, in the course of time, more resistant, and approximate, as *Donders* correctly states, to elastic tissue; others become transformed into gelatiniferous tissues, like those of the formative cells of connective tissue; others, again, into synto-nine, as in the smooth muscular fibres, others into horns, etc., etc. If we adopt a proteine compound as the primitive cell-membrane, as we are constrained to do from the reaction of young cells and embryonic parenchymas, there results an agreement with vegetable cells; seeing that in this case the *primordial utricle* of the latter, which consists of a proteine substance, may be regarded as the analogue of the animal cell-membranes; whilst the cellulose membrane appears as a secondary formation, as a product of excretion. This may be the case in the animal tissues of the Tunicata, which are composed of cellulose; in which case, my assertion, that, in the latter, cell-membranes composed of cellulose occur—and that of *Schact* (*Müll.* Arch. 1851), that they are nitrogenous—would be compatible. If the future justifies this comparison of animal-cells with the primordial utricle of plants, which I do not doubt, all the chemical metamorphoses of the cell-membranes *would*, very probably, *be owing to deposits which are precipitated on their outer side*, similar to the cellulose in plants; so that, besides the original proteine membrane, other secondary elastic membranes, or gelatinous envelopes, etc., would require to be distinguished. In this case we could say, that even the most important thickenings of the animal-cells take place on the external side of the proteine membrane, seeing, for example, that the original cell-membrane is still to be met with within the ossified cartilage-cells."

This duplication of the cell-wall may be more clearly understood from the description of the cartilage-cells.

"In form, the cartilage-cells present but little that is peculiar; they are mostly round or oblong, frequently flattened or fusiform, very rarely stellate (in Cephalopoda, Rays; in Enchondromatous growths). Their membrane is delicate at first; but subsequently becomes, in most places, covered on its outer side with a second layer, which bears the same relation to it as the cellulose-membrane of vegetable-cells does to the primordial utricle. Accordingly, there are two parts to be distinguished in cartilage-cells:—1. *The proper*

cell, or *the primordial utricle* (the cartilage-corpuscle of authors), an extremely delicate-walled cell, filled with contents sometimes clear and fluid, sometimes dark and firm, together with a nucleus; and, —2. *The external secondary membrane,* or *the cartilage-capsule* (the cartilage-lacuna of authors), a firm, clear, or yellowish layer, formed by an excretion of the primordial utricle, and closely surrounding the inner cell. By continued excretion from the latter, deposited upon its inner surface, the outer cell-wall may attain a laminated appearance, and a very considerable thickness. The contents of the delicate cartilage-cell coagulate and shrink up on the addition of many re-agents, and even of water; so that an interval is formed between it and its capsule, and it becomes converted into a dark and jagged corpuscle, without any distinct nucleus, the nature of which it is difficult to recognise."

In like manner, the author's views as to the development of cells; have altered somewhat since the publication of the Sydenham edition of his work,

Schwann believed that cells were chiefly developed in a free cyto-blastema, prepared by the influence of other pre-existent cells, but that the new cells were developed independently of any direct aid from the cells which prepared the material.

In the Sydenham edition the author states, that this free cell-development does not occur in man and the higher animals so frequently as has been assumed, and that but few examples of the process can be adduced; and the editors assert, in a note, that there is no evidence of its occurrence even in these instances. In the present edition, this mode of development is entirely given up, and cells are described as multiplying by fission and endogenous growth only.

Leaving the general doctrine of cells, we now pass to the chapter on the structure of the lungs. In the review of Dr. Salter's work on asthma, inserted in our last number, we have spoken at some length of the function of the muscles of Reisseisen. The anatomy of these muscles of the bronchial tubes and the air vesicles, is thus described by Kölliker:—

"The *intimate structure* of the bronchi and air-cells is as follows —The *bronchi* are, in the main, constructed like the trachea and its branches; still some differences present themselves even from the commencement, and these increase more and more as the bronchia are traced onwards. Two coats may, for the sake of convenience, be distinguished upon them: an outer *fibrous coat*, partly possessing *cartilages*, and a *mucous coat*, in which is a *layer of smooth muscular fibres*. The outer coat, formed of connective tissue and elastic fibrils, is as thick on the first bronchia within the lung as in the two main

bronchi from which they spring. It becomes, however, gradually more and more attenuated, and is scarcely demonstrable with the knife on bronchi below $\frac{1}{2}'''$ in diameter. Traced onwards, this coat is found to coalesce eventually with the mucous membrane and the loose connective tissue, which connects the bronchi with the pulmonary parenchyma. In it are seated the cartilages of the bronchia, which, instead of semicircles, are here irregular angular plates, distributed over all parts of the circumference of the tube. These plates are at first large and closely disposed, but become further apart from each other where the bronchial tubes send off branches, becoming progressively smaller and smaller, till at length they disappear from bronchia below $\frac{1}{2}'''$ in diameter. This is certainly the rule; but *Gerlach* believes he has seen them upon bronchia $\frac{1}{10}'''$ in diameter. These cartilages are not unfrequently reddish, and their structure, at first, exactly resembles that of the tracheal rings; as the cartilages become smaller, the differences between the superficial and deeper cells disappear, and the tissue becomes alike throughout, and resembles the interior portion of the larger cartilages. The *muscular fibres* are observed in bronchia of all sizes, forming flat fasciculi, which completely encircle the tube, and form a perfectly unbroken layer; in very old people, however, spaces are found to exist between the fibres. These muscular fibres have been observed upon branches $\frac{1}{10}'''$ $\frac{1}{12}'''$ in diameter, and, therefore, probably occur even up to the pulmonary lobules.—Intimately connected with the muscular coat is the *mucous membrane,* which, at first, has the same thickness as in the trachea; but this, like the other component coats, gradually becomes attenuated, so that bronchia below half a line in diameter have altogether only a very thin wall. At its attached surface, this membrane is composed throughout of elastic longitudinal fibres, whose bundles give to the inner surface of the bronchi the characteristic longitudinally striped appearance, and also give rise to a longitudinal folding of the mucous membrane more or less distinct. Secondly, there is a homogeneous layer, 0·002‴ to 0·003‴ in thickness, on which is situated, thirdly, the *ciliated epithelium.* This epithelium in the larger bronchia, as far as those of 1‴ in diameter, is composed of several layers, but gradually becomes reduced to a single layer of ciliated cells. 0·006‴ in length. The bronchial tubes possess, at first, numerous racemose glands, which, however, disappear upon canals of 1‴ to $1\frac{1}{2}'''$ in diameter, although *Remak* says he has seen them in the walls of the finest bronchia just before they enter the ultimate lobules.

"*Pulmonary Vesicles.*—In these we may demonstrate the existence of two layers, the one fibrous, the other epithelial; and I am not prepared to admit that there are any other coats than these. The *fibrous* coat is obviously continued from the bronchia, and consists of the mucous membrane, which has become very thin and conjoined with the fibrous layer. This coat is completely destitute of smooth muscular fibres, and consists of a homogeneous stratum of connective tissue, together with elastic fibres and numerous vessels.

The *elastic fibres* (0.005‴ to 0·002‴) appear chiefly in the form of separate trabeculæ and stripes, coursing upon the borders of air-cells and around their openings; they anastomose in all directions with each other, and they form a firm frame work, between which the softer vascular parts of the alveoli are stretched. These elastic trabeculæ are generally composed of yellow fibres, arranged as closely as possible, the meshes of the network appearing only as very narrow fissures, so that it is diffiult to recognise the nature of the tissue we are observing; but sometimes the fibres are more loosely connected, and then their elements are distinct. The trabeculæ meet and coalesce with each other around the pulmonary vesicles, so that the boundaries of the separate air-cells are rarely to be distinguished. A few elastic fibres of the finer kind also proceed from the trabeculæ into the remaining walls of the pulmonary vesicles, and become connected therein to form a wide network. The *connective* tissue of the air-cells, which appears perfectly homogeneous, gives place to the elastic elements and vessels, where these are in large quantity, and comes to view, so to speak, only in the walls of the alveoli, between the elastic trabulæ, serving to connect the numerous capillaries."

Long before the microscope was re-introduced as a means of anatomical research, the late Professor Macartney, of this city, suggested, from a consideration of the difference between the phenomena of pneumonia and those of bronchitis, and also on account of the difficulty he saw in the expulsion of mucus from the air vesicles, that the membrane lining these vesicles resembled in its structure the serous membranes, rather than the mucous.

Since that period, Dr. Addison surmised from the difference in the phenomena of these two diseases, that the air-vesicles were destitute of epithelium altogether: and in a paper in the "Medico-Chirurgical Transactions," vol. xxxii., and in another in our contemporary, "Brit. and For. Med. Chir. Review," No. xxxii., strongly advocated the same view. On this point the investigations of Professor Kölliker prove the existence of an epithelium, but of a character so closely resembling that of the serous membranes, as to fully justify the speculation of Macartney—

"The *epithelium* of the pulmonary vesicles is an ordinary pavement-epithelium without cilia, which forms a single layer, and rests immediately on the fibrous coat. Its cells measure 0·005‴ to 0·007‴ in diameter, and 0·003‴ to 0·004‴ in thickness; they are pale, granular, and polygonal, in disease sometimes containing fat-granules. A regular desquamation of this epithelium has been stated to take place by some authors, but with as little evidence here as in the trachea and bronchi. It is true, that single cells of this epithelium may become mingled with the bronchial mucus, whether by accident

or by disease, and, after death, the epithelium of the air-cells in man is frequently found free inside the air-cells and in the finest bronchia; but the epithelium may be observed *in situ* in some alveoli in almost every human lung, while, in newly killed animals, there is not the slightest difficulty in observing this membrane in its normal position."

In describing the distribution of the blood-vessels in the lung, a fact is mentioned, on the authority of Virchow, which has an important bearing on the controversy that has for some time been waged between Dr. Heale and the anatomical world, as to the distribution of the bronchial arteries. Dr. Heale, it will be remembered, asserts that the blood carried to the lungs by the bronchial arteries is supplied exclusively to the parenchyma of the lung—that it is entirely returned by the bronchial veins—that no part of it is supplied to the mucous membrane of the tubes or air-cells; and that there is no communication whatever between the capillaries formed by the bronchial arteries, and those formed by the pulmonary arteries. The mucous membrane of the bronchial tubes Dr. Heale believes to be supplied by (as it were) recurrent branches from the pulmonary plexus of the air-vesicles; and the blood that has supplied the mucous membrane of the tubes, he describes as being returned by the pulmonary veins.

Dr. Waters, on the other hand, who entered the lists as champion for the anatomical world, asserts that the bronchial arteries are distributed to the parenchyma of the lungs, and that they also supply the mucous membrane of the tubes as far as the air-vesicles, and that their blood is poured into the pulmonary veins, causing these vessels to return to the heart a mixed fluid, formed of the arterialised blood, derived from the capillaries of the pulmonary artery, and a venous blood, derived from the capillaries of the bronchial artery. The bronchial veins, Dr. Waters asserts, do not pass into the substance of the lungs at all, being found only at the roots of these organs. It is obvious that, if the bronchial arteries are capable of supplying the place of the pulmonary arteries, when these are obstructed, and become enlarged for that purpose, there must be a free communication between the two systems of vessels, though it may be quite true that the mucous membrane of the bronchial tubes is chiefly supplied by the pulmonary vessels, which is disputed by Dr. Waters, and we think on good grounds.

"It is worthy of observation, that in addition to the air-vesicles, some other parts in the lungs are supplied by the pulmonary vessels, viz., the *surface of the lung* and the *finer bronchia*. With regard to the former, there are seen at different places, upon an uninjected

lung, small branches of the pulmonary artery passing to the surface of the lung, and ramifying beneath the pleura. *Reisseisen* (p. 17) describes these vessels, and gives very beautiful drawings of them (tab. iv. v.); and recently *Adriani* has followed them in injected lungs, and states that they describe a tortuous course and frequently anastomose, being here considerably thicker, and forming wider networks than the vessels of the alveoli. The blood of these networks is drawn off by superficial roots of the pulmonary veins on the one hand, and on the other hand, by anastomoses with the expansion of the bronchial vessels on the pulmonary pleura. That the pulmonary arteries also supply the bronchia in part, had been already mentioned by *Arnold* (*Anat.* ii. 171); and we are indebted to *Adriani* for more particular information on this interesting subject. According to him, the pulmonary arteries and the pulmonary veins are the vessels chiefly concerned in the formation of the capillary network on the surface of the bronchia. This plexus is distinguished by the elongated form of its meshes, while its vessels are almost as narrow as on the air-cells, measuring in man 0·004‴ to 0·006‴ in diameter. The bronchial vessels in this situation appear to supply more especially the muscular and fibrous coats of these canals. As may be easily understood, the two systems of vessels have here a certain connection between each other, and, accordingly, the older anatomists, as *Haller*, *Sömmering*, and *Reisseisen*, are quite right when they speak of a connection between the two systems of vessels. According to *Adriani* and *Rossignol*, the bronchial arteries and veins can be injected from the pulmonary veins, and, *vice versa*, the pulmonary veins from the bronchial arteries, although the bronchial vessels cannot be injected from the pulmonary arteries.

"Supported by these facts, we are justified in ascribing to the finest bronchia a share in the process of exchange of gases in respiration, although, on acccount of the somewhat greater thickness of the epithelium, and the somewhat wider capillary network of the fine air-tubes, their share must be inferior to that of the pulmonary vesicles. We may also make mention here of the enlargement of the bronchial arteries, and of the extension of their region of distribution in cases of disturbance of the circulation in the pulmonary arteries (compare VIRCHOW, in his *Archiv.*, iii. 3. p. 456). Here the bronchial arteries frequently replace whole branches of the pulmonary arteries, and become actual respiratory vessels; conditions which are readily explained by the occurence of numerous normal anastomoses between the two systems of vessels. Very recently, *Beau* has maintained that the pulmonary arteries supply the mucous membranes of all the bronchial tubes, even up to the trachea."

Still dipping almost at random, we open now at the section on muscular tissue. The paper in which Mr. Bowman first described the structure of the striated muscles was so complete and so accurate, that it left very little for subsequent writers to dilate upon. On two points controversy has arisen: on the

first of these, viz., whether fibrils exist during life, or whether they are merely the separation of the fibres into longitudinal columns of sarcous elements, instead of into discs, or transverse segments, the tendency to separate in both directions being nearly equal, Kölliker argues for the existence of the fibrils during life; but the other, raised by Dr. Carpenter, as to the cellular nature of the sarcous elements, is not touched on at all.

"Various controversial opinions still prevail, as regards the composition of the muscular fibres. Several authors, above all, *Bowman*, are of opinion, or at least consider it as probable, that the fibrils are artificial products. According to the last-named author, a breaking up of the muscular fibres into *discs* (fig. 65) is quite as natural, although not quite so frequent, as that into fibrils; and they may with equal justice be held to be columns of discs, as bundles of fibrils. Were a muscular fibre broken up in the direction of both the transverse and longitudinal striæ, small, roundish-angular particles would be produced, which might be designated primitive particles, or *sarcous elements*. In the muscular fibre, these elementary particles are united in the transverse, as well as the longitudinal direction and form, in the one case a disc, in the other, a section or joint of the fibrillæ. The breaking up into discs could, in my opinion, be considered of importance only if it occurred as frequently as that of fibrils, and also took place occasionally in fresh muscles. But nothing of the sort is to be seen in the fresh muscles of man and the higher animals. It is rare, even, in macerated fasciculi; while, on the other hand, the fibrils can be isolated in almost every muscle, by any one moderately conversant with the matter.

"In *transverse sections of fresh-dried or fresh muscles of the frog*, the transverse sections of the fibrillæ can be distinctly seen, which fact refutes all those opinions according to which the muscular fibres, during life, consist of a homogeneous solid or fluid substance. Moreover, it may be remarked, that the assumed elementary particles can only be isolated with difficulty, except in macerated muscles, where their separation is undoubtedly easy; and also, that in the perfectly fresh muscles of certain insects (*coleoptera neuroptera, hymenoptera, lepidoptera, diptera, orthoptera* in part, *hemiptera* in part), the individual fibrils can be very beautifully separated. Considering the great similarity between the muscles of insects and those of the higher animals, in all other essential points, the above fact appears to me to be very striking. I am, therefore, for this and the other reasons assigned, fully convinced of the existence of fibrils during life, and believe that, in man and many animals where they cannot be so easily isolated, they are held together by an intermediate substance, and, in fact, so firmly, that, under certain circumstances, fissures may take place across the fibres, *i. e.*, in the direction of the thinner parts of the fibrils.

"I consider the sarcous elements as artificial products, occasioned by the breaking up of the fibrils at the parts where they are thin-

ner, which naturally takes place much easier there than elsewhere. I refrain from giving an opinion as to the nature of these particles, as I hold that our microscopes do not afford adequate data for forming a sure judgment respecting elements of such fineness."

With one more extract on the pathological condition of muscles, we must close these desultory notes on this most valuable work, the study of which is indispensable to all who desire an accurate knowledge of the intimate structure of the body:—

"With respect to the *pathological* conditions of muscles, the following remarks occur. The substance of the transversely striped muscles is not regenerated, and when divided by a wound, it heals simply by means of a tendinous cicatrix. A new formation of muscular tissue has been seen by *Rokitansky* in a tumour of the testicle of an individual eighteen years old, and by *Virchow* in an ovarian tumour. In the latter case, which I had an opportunity of observing, the new tissue consisted of long, transversely striped, fusiform cells, each with a nucleus. In hypertrophy of the muscles, which never, or, at least, most rarely, occurs in transversely striped muscles, with the exception of the tongue, heart, and certain respiratory organs (*Bardeliben*), the elements, according to *Hepp* and *Wedl*, appear simply to increase in thickness; and, according to the former, the hypertrophied fasciculi in the heart are four times larger than the normal. A true atrophy takes place in old age. The fibres are then narrow, some only 0·004‴ to 0·008‴ in diameter, friable, and, for the most part, without transverse striæ, and with indistinct fibrils. They often contain a large number of yellowish or brown granules, and numerous vesicular nuclei with nucleoli, which are often arranged in linear series, or collected in heaps upon the inner side of the sarcolemma; and, singularly enough, exhibit the same indications of an energetic multiplication by endogenous formation, as in the embyro. Besides these, many other pathological processes accompany atrophy of the muscles. In *the formation of fat in the muscles*, which often occurs in the heart, the muscular fibres are gradually displaced by connective tissue and fat-cells developed between them; whilst in their *fatty degeneration*, the fibrils gradually disappear, fat-granules being developed in their place, for the most part in linear series; or even fat-cells are formed within the sarcolemma. At the same time, the muscles become softer, paler, and more yellowish, and the fibres readily break down. Paralysed muscles were found by *Reid* to be thinner, softer and paler, and by *Valentin*, to have indistinct transverse striæ. More recent observers have found in such muscles, for the most part, atrophy with fatty degeneration.

"In *emaciated* individuals, the muscles are pale and soft, and the fasciculi small. The muscular fibres sometimes, though rarely, become calcified, so that the muscles split up like asbestos. Ossifica-

tion of a muscle, as sometimes happens in the deltoid, from pressure of the musket in military exercise (the so-called *Exercirknochen*), arises in the connective tissue, which may also occasion a fibrous metamorphosis of the muscle by its undue increase. In *cancer* of the *pectoralis major*, I found the sarcolemma filled with beautiful rows of pale nucleated cells. Of *parasites*, may be mentioned the *Cysticercus cellulosæ*, which lies between the fasciculi, and *Trichina spiralis;* further, a nematoid worm, which Bowman (*Cyclop. of Anat.*, ii., p. 512) saw living in the almost empty sarcolemma of the muscles of the eel. Organic formations—but whether of vegetable or animal nature, is uncertain—are found in rats and mice, as white streaks of 4‴ to 7‴ long, and 0·009‴ to 0·1‴ broad, and, on microscopical investigation, seem to be *hollow primitive fasciculi* filled with elliptical, slightly curved corpuscles of 0·004‴ to 0·005‴ long, and 0·0019‴ broad, resembling eggs."

Het Leven en het Maaksel der Dieren. Door W. Vrolik, Hoogleeraar te Amsterdam; Secretaris der Koninklijke Akademie van Wetenschappen. Amsterdam: M. H. Binger en Zonen. Eerste Deel, 1853, pp. 375; Tweede Deel, 1854, pp. 494; Derde Deel, Gebroeders Binger, 1860. pp. 471.

The Mode of Life and Organization of Animals. By W. Vrolik, Professor at Amsterdam; Secretary to the Royal Academy of Sciences. Amsterdam: Binger, Brothers. 1853–1860. In three volumes. pp. 1340.

In the great work on Natural History just completed, for the present at least, by the learned secretary of the Royal Academy of Sciences at Amsterdam, we are presented with a very full and interesting description of the form, organization, and mode of life of the vertebrate classes of animals. We are glad to perceive that the author holds out a hope that at some future period, if life and health be spared to him, he may render his volumes still more perfect, by the addition of a fourth part, on the invertebrate classes. The work is at present divided into thirty-four chapters; and, at the end of the third volume, a copious index to the whole is given.

In the first chapter the author reviews the life of animals, as manifesting an immaterial principle in Nature. The second and third chapters are, also, more or less introductory. The fourth is devoted to the subject of classification; and the fifth, to a general review of vertebrate animals. In the sixth, the author commences, with the Quadrumana, his detailed descrip-

tions of the several classes; and terminates them, in the thirty-fourth, with a general view of the structure of fishes.

The anatomical portions of the work, as being less within the reach of all, are printed in smaller type, and contain more of the author's original observations than the parts belonging more properly to the subject of natural history.

In the present notice, we can do little more than point out the general arrangement of this great work, which must henceforward be of standard authority on the subjects of which it treats, and express our satisfaction that it is so far completed. The more strictly scientific character of the work is relieved by the number of apposite quotations from classical writers in various languages, from time to time introduced by the author; and those which he brings forward from our own poets prove him to be well acquainted with English literature. We shall, in conclusion, adduce a note appended to p. 97 of the third volume, partly because it refers to the labours of the late distinguished Curator of the Museum of the Irish College of Surgeons, and partly because it exhibits the total absence of rivalry in the true lover of science. Speaking of his own paper on the tongue of the chameleon, published at Amsterdam in 1827, Professor Vrolik says:—"A year later appeared the observations of Houston 'On the Structure and Mechanism of the Tongue of the Chameleon,' in the 'Transactions of the Royal Irish Academy,' vol. xv., p. 177. Dublin: 1828. They agree in the main with mine, with which, however, the writer seems not to have been acquainted. Two years afterwards appeared the treatise of Duvernoy on the same subject. He was not aware of the labours of either of his predecessors, but agrees in great part with them. See Duvernoy: 'De la Langue, considérée comme organe de la préhension des aliments,' in 'Mémoires de la Société d'Histoire Naturelle de Strasbourg,' tome i. Paris: 1830. I need not say that this note is not put forward as a claim of priority, but to indicate an agreement, manifesting itself in three places remote from one another, and certainly admirably calculated to remove former erroneous ideas on the subject."

It would be injustice to the publishers not to allude to the very beautiful manner in which Professor Vrolik's volumes have been brought out. The style of the book is extremely creditable to the Amsterdam house from which it has issued.

Further Researches on the Gray Substance of the Spinal Cord. By J. Lockhart Clarke, Esq., F. R. S. Reprinted from the Philosophical Transactions. Part I. 1859. 4to. pp. 30. 7 Plates.

Mr. Clarke is a laborious and patient investigator into the structure of the nerve-centres. He has discovered methods for rendering sections of nerve-tissues sufficiently transparent to admit of their being examined in the microscope, even when so thick as the one-twelfth of an inch, and he has applied himself, by means of these, to the tracing of the minute anatomy of the spinal cord and medulla oblongata.

We very recently gave our readers some account of his paper on the "Medulla Oblongata;" we have now to bring under their notice a paper on the "Spinal Cord," being the third on this subject communicated by him to the Royal Society. We do not attempt to criticise; our business is simply to notify the progress that has been made. Indeed, Mr. Clarke confines himself so absolutely to the statements of the facts he has discovered, and to the descriptions of the appearances presented by the sections he has made, that criticism is out of the question; we have simply to accept what is presented to us. Hereafter, no doubt, the materials now being brought forth, prepared, and arranged, will be utilized; facts now discovered will lead to the discovery of others, as, indeed, many of Mr. Clarke's have already done; and when our knowledge of the structures is complete, the explanation of the uses of the parts will not be difficult.

The first of Mr. Clarke's papers on the "Spinal Cord" was published in the Philosophical Transactions for 1851, and was the result, he tells us, of two years' labour. In it he gives an account of two considerable columns of caudate vesicles that he discovered extending along the whole length of the spinal cord commencing small at its lower extremity, increasing in size in the lumbar and cervical enlargement, and terminating at the upper part of the medulla oblongata. These columns, which he proposes to name the "*posterior vesicular columns*," have the posterior roots of the spinal nerves in intimate connexion with them. They are situated at the inner side of each of the posterior cornua of the gray substance, immediately behind the posterior commissure. In this paper, also, the spinal accessory nerve is described as arising from a column of gray substance at the side of the cord; and, among other things, it is shown that the number of the caudate vesicles in the several parts of the cord is in direct proportion to the number

of nerves arising at each part, and that the nerve-fibres found in the gray substance are tubular, and not solid, as had been asserted. The second paper, published in the volume of the Transactions for 1853, is chiefly devoted to the description of the roots of the nerves. In concluding this paper, he allowed himself to be betrayed into the following very incautious and unphilosophical assertion:—

"In concluding this series of investigations, it has appeared to me that, considering the beauty and transparency of my preparations, the distinctness with which their several parts have been preserved, and the persevering labour which has been bestowed upon them, I might almost venture to think we have obtained nearly all that it is possible to know—with our present means—concerning the minute anatomy of the spinal cord."

The folly of this finality assertion did not long remain undemonstrated, as not two years elapsed until Professor Schrœder van der Kolk published his memoir on the "Spinal Cord," the translation of which, by the new Sydenham Society, we lately reviewed at some length, and in which our knowledge of the very point discussed in this paper is carried considerably farther than where Mr. Clarke left it,—the roots of the nerves being traced into their connexion with the multipolar vesicles of the gray substance, a point not attained by Mr. Clarke.

The present paper gives an account of further researches on the gray substance of the spinal cord, more particularly on the posterior cornua. It is well known that Rolando described the apices of these cornua as differing in appearance from the remainder of the gray substance of the chord, and named the part forming them the "*Substantia Gelatinosa*." Mr. Clarke is not quite satisfied with this description, and thinks it would be advantageous and convenient to describe the posterior cornua as consisting of two parts: 1. The *caput cornu*, comprising the substantia gelatinosa, and an opaque layer immediately in front of it; 2. The *cervix cornu*, connecting the caput with the central portion of the gray substance and the posterior commissure.

"This distinction is grounded on the facts,—1, that in ascending the *medulla oblongata*, the part which I designate the *caput* cornu is thrown aside from the rest, as a distinct mass which is traversed in succession by the vagus and glossopharyngeal nerves, and then becomes the principal nucleus of the sensory root of the trifacial; and 2, that, independently of the *gelatinous substance* which surrounds it, it differs in structure from the *cervix*, or remaining part of the cornu, which, in the *medulla oblongata*, supplies the gray substance of the *posterior pyramid* and *restiform body*. This distinction it not

only consistent with anatomical facts, but will be the means, I think, of adding clearness and precision to the description of these parts."

The minute structure of these parts is very carefully described, especially the structure and relations of the posterior vesicular columns, which occupy the inner part of each cervix; and another column of vesicular matter is described as occupying the outer part of the cervix, which Mr. Clarke names the "*tractus intermedio-lateralis.*" Considerable pains is taken to trace these several tracts as continuous columns; but, it is evident from the description, that, in the lumbar and cervical enlargements, where the vesicular matter is most abundant, the appearance of distinct columns is lost; and it is only in the parts where the fewest nerves arise, as in the dorsal region, and where the vesicular matter is least developed, that the columnar appearance is at all distinct. And we would ask, is not this desire to trace columns a remnant of the old teachings, which referred all the functions of the spinal cord to the several columns of the white matter? We believe that muscles which are associated in action are supplied by nerves arising from special groups of multipolar cells; but we doubt very much if there really be distinct columns of gray matter. The following extract affords an interesting example of the grouping of the cells for special purposes.

"It has also been seen that the cells of the *tractus intermedio-lateralis* are elongated with their processes in a longitudinal direction, and reached by both the *posterior* and *anterior roots* of the *spinal* nerves, and perhaps by the *spinal-accessory;* that the latter nerve extends *forwards* to the cells of the *anterior cornu,* which also send some of their processes *longitudinally,* and are reached by the *posterior* roots. Moreover, I have in another memoir shown that, while *one* portion of the *upper* roots of the *spinal-accessory* nerve and *one* portion of the *vagus roots* proceed *inwards to their respective nuclei behind the canal, other* portions of *both bend forwards to the vesicular network into which the anterior cornu has become resolved.* Again, I have shown, in the same memoir, that some of the roots of the *trifacial nerve descend longitudinally through the caput cornu,* between the transverse roots of the *vagus;* in which course they are probably brought into connexion with the *respiratory centres,* and perhaps also, like the *vagus,* with the anterior gray substance of the medulla. These extensive and intimate connexions seem to afford an explanation of the mechanism by which impressions made on the vagus and on the incident fibres of the trifacial and spinal nerves may call into action the whole class of respiratory muscles; and if the tract which I have just described in the upper part of the cervical region be continuous, as it probably is, with the *tractus intermedio-lateralis,* which is reached by the dorsal nerves supplying the intercostal and respira-

tory muscles of the trunk, the explanation in question will be still more complete."

In the conclusion of this paper, van der Kolk's account of the connexion of the roots of the nerves with the processes of the multipolar cells, of which the author had not been able to satisfy himself at the period of his former papers, is admitted and confirmed; and, in an appendix, an account is given of some improvements that have been effected in the mode of preparing nerve tissues for microscopic examination.

Mikroskopische Orderzoekingen over de Ontaarding van Aderen en Zenuwen in Kanker, Door F. R. Westhoff. Proefschrift ter Verkrijging van den Graad van Doctor in de Geneeskunde aan de Hoogeschool te Utrecht. Utrecht, P. W. van de Weijer. 1860. 8vo. pp. 68. with a plate.

Microscopic Investigations on the Degeneration of Veins and Nerves in Cancer. By F. R. Westhoff. A Thesis for the Degree of Doctor of Medicine in the University of Utrecht.

It was in the year 1826, that Professor Schroeder van der Kolk, in examining an injected fibrous tumour, found that the new formation presented only minute capillary arteries; of veins, communicating with those of the surrounding parts, there appeared to be none.

This peculiarity was subsequently observed by him in other similar tumours, as well as in those of a carcinomatous nature. Many other and good investigators, and among these Berard, made the same observation, partly independently of van der Kolk, partly in consequence of having their attention directed by him to the subject, as Rokitansky, Virchow, and others. To many others these views seem to have been unknown, or their truth has been directly denied by them, as most recently by Gerlach. The writer of the essay before us—having quoted several original authorities upon the point in question, and having described several specimens of fibrous and carcinomatous tumours, illustrative of it, to be found in the anatomico-pathological museum of Professor van der Kolk—proceeds, in the fourth section of his first chapter, to consider the changes of the nerves in carcinoma. We pass over his description of five specimens from the same museum, from the examination of which he infers that "in fungus medullaris the nerves are readily

attacked, and may even be completely corroded ; and that the veins, in carcinoma, are affected as well as the nerves."

In his second chapter, Dr. Westhoff relates the case of carcinoma of the stomach which gave rise to his dissertation, and proposes to trace and to describe the causes of the changes under consideration. On submitting, after death, a small portion of the carcinoma to a 450-magnifying power, cells such as occur in cancer, of different sizes, with nuclei, nuclear corpuscles, and granular matter, as well as distinct parent and young cells, were observed. The chief object, however, was to examine the condition of the vessels, why absolutely no veins occur in carcinoma. A portion of the mucous membrane of the great curvature was taken, where here and there blue injected vessels were still visible, showing, under the microscope, the capillaries running very beautifully ; suddenly, however, the blue colour disappeared, and the subsequent portion of the capillary vessel was filled with granular matter, nuclei, and cells. "Cruveilhier," adds the author, "when he speaks of the explanation of the fact, observed by Bérard, that only arterial capillaries are found in carcinoma, appears to have suspected this condition ; for he says : 'L'objection tirée de l' injection me parut un argument en faveur de l'opinion que je soutiens, car comment l'injection pourrait elle pénétrer dans les veines malades et pleines de matière cancéreuse, les artères étant dans leur état d'integrité ont du être perméables à l' injection'. But he has not established this by microscopic investigation : what he thus suspected and supposed, has been demonstrated in the present case."

We have quoted sufficient to indicate the leading points dwelt on by Dr. Westhoff, in his academic thesis. This subject is admirably illustrated by a lithographic plate, coloured sufficiently to show the abrupt termination of the blue injection, and containing eight figures, after a drawing, as we are informed in the preface, by the writer's distinguished "Promotor," Professor J. L. C. Schroeder van der Kolk.

The Management of Infancy, Physiological and Moral. Intended chiefly for the Use of Parents. By Andrew Combe, M. D., &c. Ninth Edition. Revised and Edited by Sir James Clark, Bart, M. D. Edinburgh : Maclachlan and Stewart. 1860. 12mo, pp. 302.

The fact of a book having arrived at the mature age of nine editions, may be considered as affording ample grounds for the

presumption that the objects contemplated by its author have met with a fair degree of appreciation at the hands of the class of readers for whom the work was originally designed. The first edition of Dr. Combe's treatise appeared about twenty years ago, and was designed to supply what the author had the sagacity to perceive was a serious desideratum, namely, a code of plain and rational instructions on the "management of infancy," using this term in its widest and most comprehensive application. For although, previous to the period to which we have referred, several excellent treatises had appeared, yet the information thereby supplied was, in some instances, adapted exclusively to the requirements of professional readers, while in others it consisted of rules and directions addressed expressly to mothers, but conveyed in the form of so many abstract dogmata, without enunciating the principles on which such rules were founded. The author of the present work rightly conceived that the usefulness of a book of the latter kind would be much enhanced were it to present the several practical directions, not as the crude expression of mere opinions, but as legitimate deductions from certain physiological principles, a general outline of which should be laid before the reader, as the most rational means of enforcing the inculcations of which they form the basis. Dr. Combe was strongly impressed with the conviction that the general principles of physiology, especially in its relation to the human constitution in the earlier period of its existence, should constitute an essential part of the education of females. His views on this subject are so forcibly conveyed in the following passage, that we offer no apology for transcribing it:—

"In no point of view," he writes, "is it possible to defend the prevailing error, of leaving out what ought to constitute an essential part of female education. Till this defect be remedied, thousands of young beings, who might have been preserved, will continue to be cut off at the very outset of existence, to the lasting grief of those who would have been happy to guard them against every danger, had they only known how. Even in the best regulated families, it is rare to meet with a mother who, before becoming such, has devoted the least attention to the study of the infant constitution, to the principles on which it ought to be treated, or to the laws by which its principal functions are regulated. She enters on her important charge with less preparation than if it were a plant or a flower, instead of a being in whose existence her whole soul is centred. Yet to her exclusively the infant looks for that cherishing and affectionate care which its delicate frame requires; to her it directs every appeal, in the full confidence that she will be ever watchful for its happiness and relief, and that from her a look or a cry will procure

the requisite sympathy or aid. She it is who provides its nourishment, regulates its exercise, and watches over its slumbers. But when we inquire to what extent her education has fitted her for the intelligent discharge of the duties which thus constitute the chief objects of her social existence, we find that in the majority of instances, on no one point relating to them has she received even a tittle of instruction, and that she marries and becomes a mother without a suspicion of her deficiency in the most ordinary information concerning the nature and functions of the infant whom she is suddenly called upon to cherish and bring up. When her heart is wrung by witnessing its sufferings, and she knows not to what hand to turn to save it from impending danger, she bitterly laments her ignorance and helplessness. But not being aware that much of the difficulty and danger proceeds from her defective education, the idea never occurs to her that those who come after her must, in their turn, go through the same painful and profitless experience with *their* children, unless, with rational foresight, they be prepared by the requisite training for those duties which they may soon be called on to perform.

"It is true that all women are not destined to become mothers; but how very small is the proportion of those who are unconnected by family ties, friendship, or sympathy with the children of others! how very few are there who, at some period of their lives, would not find their usefulness and happiness increased by the possession of a kind of knowledge so intimately allied to their best feelings and affections!

"It may indeed be alleged that mothers require no knowledge of the laws of the infant constitution, or of the principles of infant management, because *medical aid* is always at hand to correct their errors. According to the present habits of society, however, professional men are rarely consulted till the evil is done, and the health broken; but even if they were, intelligence and information are needed in the mother, to enable her to fulfil their instructions in a rational and beneficial spirit. On every account, therefore, it is urgently necessary that female education should be such as to fit both mind and body for the duties as well as for the embellishments of life,—for the substantial happiness of the domestic circle, at least as much as for the light and fleeting hours of fashionable amusement,—and that, while every effort is made to refine and elevate the mind, the solid substratum of useful knowledge should not be neglected."

It is not improbable that the opinions expressed in the foregoing passage may, to some minds, appear to savour of the fanciful, and to have resulted more from imagination than experience; while haply there are some who maintain that the public in the present day are becoming rather too well informed in respect of matters relating to medicine; and that the ten-

dency of works like the present is by no means beneficial, but rather conduces to favour a belief in the possibility and propriety of placing mothers and nurses in a state to dispense with the services of the medical practitioner altogether in too many instances. The author, indeed, would appear to have anticipated some such objection in the present case, for, in speaking of those treatises which preceded his own, he considers that few of them were calculated to supply parents with the *kind* of information which, in their circumstances, is especially needed.

"Most of those hitherto published," he says, "touch briefly upon the general management of early childhood, merely as preliminary to an exposition of its diseases; and the perusal of them by non-professional persons frequently leads to dangerous tampering with the lives of the young. On this account, I cannot but consider them as improper guides for any except medical readers."

Physicians who have had much experience in the treatment of infantile disease will, doubtless, concur in entertaining the conviction so unhesitatingly expressed in another part of this work, namely, that a child cannot encounter many greater dangers than that of being subjected to the vigorous discipline of a medicine-giving mother or nurse; and that wherever a mother of a family is observed to be ready with doses of calomel, cordials, anodynes, and other active drugs, the likelihood is that one-half of her children will be found to have passed to a better world. But, when it is admitted that the duty of administering drugs, or rather the province of prescribing them, belongs not to the mother or the nurse, the young practitioner will very soon learn that, upon the skill with which the general management, both before and during illness, is conducted, —a skill to which it should be the anxious endeavour of every mother to attain,—will much of his success in the treatment of many infantile diseases depend. And is not every practical man fully sensible of the disadvantage under which he is liable to be placed in endeavouring to make an accurate diagnosis of an obscure case, when, on his inquiring into the previous history of the little patient, whom, perhaps, he has never seen before, he finds himself unable to elicit from the ignorant and thoughtless, or the stupid and ill-informed attendant, a single reply which will be of the least use in enabling him to resolve a difficulty? —for *there are* difficulties to be met with now and then in infantile medicine, which are not to be removed at the first glance, and without very careful and prudent inquiries on the part of the practitioner. That these inquiries, then, should fail to be

understood by the attendant, will be embarrassing enough, but should their object, or the motive which suggested them, happen to be misinterpreted, a serious disparagement of his professional character may be the result.

The first chapter of the work before us is devoted to an inquiry into the causes upon which depend the remarkable differences universally observed to exist among the children of different families, as regards the probability of their attaining to adult growth; some of them being cut off one after another, by tubercular or other form of disease, whilst others, although placed, apparently, in circumstances comparatively unfavourable, grow and thrive as if they quite ignored the existence of disease in any shape. In this chapter the important question of hereditary influence, in its sundry phases, is fully and fairly stated, with a view of elucidating the social bearings of the case.

The state of health, mind, and general conduct of the mother, during pregnancy, and their influence upon the health of the future infant, constitute the subject-matter of the second chapter; while in the third, which is headed, "Great Mortality in Infancy, produced by removable Causes, and increased by Parental Ignorance," the author has brought together a large collection of statistical and other facts, from which he argues that, although the rate of infantile mortality is decidedly excessive in amount, it is, nevertheless, capable of being greatly reduced by careful and judicious management. Perhaps one of the most remarkable examples of the beneficial effects of *sanitary*, as opposed to *sanative*, measures which could have been adduced, is the well-known instance of the almost complete check to the occurrence of trismus among the infants in the Dublin Lying-in Hospital, which was effected through the adoption of the means suggested by the late Dr. Clarke for insuring an increased amount of ventilation in the wards. In the year 1782 nineteen-twentieths of the infantile deaths were caused by trismus, whereas, at present, not more than one or two cases of death from this cause are to be observed annually in that institution.

The chapters next succeeding are occupied with the consideration of the general conditions by which infant health is influenced,—conditions operating indirectly through the medium of the parents, and directly on the infant after it has assumed an independent existence. To this is added a popular outline of the peculiarities of the infant organism, as preliminary to entering upon the practical rules for the management of the different stages of infantile life. These necessarily

embrace a great variety of topics, upon which we shall not now dwell further, than to observe that the physiological principles upon which their application rests are made as plain and intelligible as could be desired.

But, in spite of the best-directed measures of precaution, illness will enter the nursery, and one or more children of the family may be affected. Let us turn to chapter XIII., under the head of "Management during Illness." Here we find the author disclaiming all intention of entering on the consideration of *medical* treatment, "because that ought never to be conducted by the parent or nurse. I refer to it," he says, "merely to add, that the previous good or bad management of the child has an important influence on the progress and result of all infantile diseases." And further on, in the same chapter, after he has given some good illustrations of the evil results of delaying to send for professional advice, and of waiting until some domestic remedy be had recourse to, in the hope of effecting a cure, he urges upon parents the duty of placing the responsibility at once upon the proper shoulders, whenever a child complains without any obvious removable cause. There is much sound sense in following passage:—

"One or two other points I would earnestly impress upon mothers. The first is, when a child is really ill, to send for the physician *as early in the day as possible*, instead of waiting, as is often done through a spirit of procrastination, till the darkness and solitude of night work upon the mother's fears, and then sending in great haste at a very late hour, when the difficulty of procuring the needful remedies is greatly increased, and the whole household is thrown into commotion. Timeously warned, the physician would make his visit at a seasonable hour, not only with more benefit to the patient, but at far less expense of time, trouble, and anxiety to all concerned; whereas, at night he is probably exhausted by the labours of the day, and of course less fit for active usefulness. In cases of acute disease, above all, this rule should be scrupulously followed. To prevent mistakes from the bad memory of servants, or from the physician's having more than one patient of the same name, a *written note* should invariably be sent, and the *address* be given. It should state also the *supposed seat and nature of the ailment;* for this information will enable him, as he goes along, to reflect on the constitutional peculiarities of the patient and the probable influence of prevailing epidemics, and to consider the precautions which a knowledge of these may suggest in directing the treatment. This is especially of importance when he is sent for in the night, because, from having some previous notion of the case, he may carry remedies with him and give relief on the spot. But in all cases it is useful, by preparing the mind of the adviser in some degree for the investigation of the disease."

The remainder of the work, from chapter XIV. to the end, is occupied with the subject of the mental and moral education of children, and the principles by which the guardians of infancy should be guided in conducting education in accordance with the progressive development of the mental faculties, and their natural aptitude for comprehending different subjects of study.

"Until these principles," writes the editor, "so lucidly expounded by Dr. Combe, are thoroughly understood and systematically acted on in the management of infant schools, these very important institutions will never realise the advantages expected of them,—and which, if rightly conducted, they could not fail to yield, by training and instructing the young so as to modify their whole character, and thus promote their welfare, their usefulness, and their happiness through life."

The interest which is at length becoming generally felt in the study of hygiene, especially in infancy and youth, makes it incumbent on young practitioners to acquaint themselves with its doctrines and their practical applications, as soon as possible, on entering into professional life. We have, therefore, no hesitation in recommending this work to their careful and attentive study, as one that may be safely and advantageously referred to on many occassions.

Archiv für Klinische Chirurgie. Herausgegeben von Dr. B. LANGENBECK, Geh. Medicinal-Rath, und Professor der Chirurgie; Director des Chirurgisch-Ophthalmologischen Klinikums der Universität; &c., &c. Redigirt von Dr. Billroth, Prof. der Chirurgie in Zürich, und Dr. Gurlt, Docent der Chirurgie in Berlin. Erster Band, erstes Heft, mit 4 Tafeln Abbildungen. Berlin. 1860. Verlag von August Hirschwald.

Archives of Clinical Surgery. Conducted by Dr. B. LANGENBECK, Medical Privy Councillor, and Professor of Surgery; Director of the Chirurgico-Ophthalmological Clinique in the University; &c., &c. Edited by Dr. Billroth, Professor of Surgery in Zurich, and Dr. Gurlt, Lecturer on Surgery in Berlin. First volume, first number, with 4 Plates. Berlin. 1860. Published by August Hirschwald.

WITH great pleasure we hail the appearance of a journal, at present we believe the only one of the kind in existence, devoted solely to the extensive subject of clinical surgery. The

volume just brought out—a goodly octavo of 273 pages, illustrated with four very beautifully-executed lithographic plates—is just what we should expect to see produced under the guidance of the three Professors, all of whom are so well known to science, under whose auspices it has been announced. The papers are varied and interesting, and embrace several of the most important topics in clinical surgery. The work is printed on good paper, and in a remarkably clear and distinct Roman type. We wish our new contemporary every success.

The journal opens with a very important communication by Dr. Langenbeck himself, on the injuries of the veins, and on tumours of the sheaths of vessels, and their extirpation. This paper, which would appear to be the first of a series of contributions to the surgical pathology of the veins, runs to the length of eighty pages. The author treats first of the exposure and contusion of large veins, and of the dangers of thrombosis; illustrating the subject with six cases. He next passes to venous hemorrhages, and the means of arresting them. The last twenty-eight pages of the paper are devoted to the subject of tumours of the sheaths of vessels, and their extirpation.

We have next a valuable chirurgico-pathological essay on "Fibroid and Sarcomatous Tumours," by Dr. Hugo Senftleben, illustrated with drawings from nature by the author himself; and we are glad to see that our pages ("Dublin Quarterly Journal," vol xx., 1855, pp. 493) have been the means of bringing under the writer's notice two interesting cases originally published by Professor Santesson, of Stockholm, in the "Hygiea."

Dr. C. Fock contributes an able paper upon "Resection in the Hip-joint," containing six original cases, and exhibiting a tabular view of all the instances (90 in number), in which the operation of excision of the head of the femur has, to the author's knowledge, been performed. Of these 90 cases, 46 occurred in England, 34 in Germany, 7 in America, 2 in France, and 1 in Belgium. About 70 of them are subsequent to the date (1849) of Professor. Santesson's valuable treatise on the hip-joint—which, we may observe, *en passant*, is not referred to by the author—fully reviewed in our eleventh volume, where (p. 432, *et seq.*) we entered at some length into the consideration of the operation.

The above-mentioned three papers constitute the great bulk of the first number of the "Archives of Clinical Surgery:" those by Dr. Danzel on the "Operation for Hare-lip;" by the same, on "Osteotomy of the Tubular Bones;" by Dr. Wetzlar, "On some Cases of Ozæna cured with Creosote;" by Dr.

Billroth, "On some Deformities of the Foot caused by Defects in the Bones;" and by Dr. H. Weyrich, "On a Case of Urinary Calculi external to the Urinary Passages;"—are much shorter; but all are of great practical value.

On Diseases of the Prostate Gland. By James Stannus Hughes, M. D., F. R. C. S. I. Dublin. Fannin and Co., 1860. 12mo, pp. 63.

Few diseases give rise to more serious distress, are attended with graver consequences, or of late years have been more closely studied, than those of that portion of our economy called the prostate gland, and of some of which we have in the work before us an admirable description. We say advisedly, "of that portion of our economy called the prostate *gland;*" for from its first discovery until very recently its structure was assumed to be glandular, whilst, now-a-days, more careful examination has proved that such structure constitutes but one-third of its entire bulk, the remaining two-thirds being composed of unstriped muscular fibre,—a knowledge of which fact is of the greatest importance in the treatment of its diseases, affording a satisfactory explanation of why it is that its enlargements should not be as amenable to the action of medicines of undoubted efficacy in the reduction of glandular swellings when situated in the other portions of the body. Every surgeon of experience knows how useless in the treatment of enlarged prostate prove the preparations of iodine, bromine, &c.; and how difficult, if indeed it be not absolutely impossible, to bring down to its normal bulk a chronically enlarged prostate gland.

In the work before us we find the diseases of the prostate preceded by an admirable resume of all that is at present known of its anatomy both relative and structural; the most modern views are set forth in the plainest yet most accurate manner; after which the Author proceeds to consider the most important of its diseases viz., acute prostatitis, gouty inflammation of the prostate, the irritable prostate, the senile hypertrophy of the prostate, and cancer of the prostate. All of these are succinctly yet faithfully described; and in the observations on these several diseases, the experienced surgeon will feel that the future practitioner will find in Dr. Hughes a safe guide in many an emergency.

In his chapter on acute prostatitis, in addition to an admira-

ble description of the disease, Dr. Hughes describes a new instrument of his own invention for applying leeches to the rectal surface of the prostate gland. This instrument appears to be possessed of many advantages, and to be fully capable of discharging the duty expected of it. In his chapter on senile enlargement of the gland, Dr. Hughes gives us a table founded on the pathological specimens in the Museum of the College of Surgeons in Ireland, that goes a long way to support Sir E. Home's views as to the relative frequency of enlargement of the right and left lobes of this gland, a point on which M. Mercier differs from that eminent authority. Sir E. Home taught, that the left was the lobe more frequently enlarged, whilst M. Mercier insists that it is the right. On examining this table, we find but three specimens in which the right lobe was enlarged, whilst there are eight in which the left was the portion enlarged; whilst there are four others in which the left and middle lobes were enlarged; thus, making up twelve cases in which the left lobe was enlarged, against three in which the right was the portion affected.

Dr. Hughes enters into the consideration of the question as to the influence exercised by old age in inducing this affection, giving us a summary of a paper read by Dr. Henry Thompson on this subject, before the Medico-Chirurgical Society of London, from which we learn, that, though a disease of advanced life, still, that old age is not *necessarily* subject to it, this, we believe, had long been the opinion entertained by most surgeons of any experience. That an enlarged prostate may be expected in many cases of stricture in advanced life, is certain; but to state that it is always present, is undoubtedly to state what is not the fact; and that this opinion is the correct one is now established beyond cavil by post-mortem statistics.

We cannot conclude our remarks on Dr. Hughes' work without expressing our opinion that it is the production of an educated and observant surgeon, and one that we can most confidently recommend to the attentive perusal and consideration of our readers.

1. *Bidrag til den obstetriciske Pathologie.* Ved Dr. F. C. Faye, Professor i Accouchement ved Norges Universitet, Overlæge ved Födselsstiftelsen og Börnehospitalet i Christiana. 1859. 8vo, pp. 48.

   Contributions to obstetric Pathology. By Dr. F. C. Faye, Professor of Midwifery in the University of Norway, Senior Physician to the Lying-in Institution, and to the Children's Hospital in Christiania. Reprint from the Norsk Magazin for Lægevidenskaben.

2. *Beretning om Födselsstiftelsen i Christiania i Aarene* 1855, 1856, *og* 1857. Ved Dr. F. C. Faye, &c.

   Report of the Lying-in Institution in Christiania for the years 1855, 1856, and 1857. By Dr. F. C. Faye.

3. *Förslag till Lag angående sundhetsförhållandenas ordnande i riket, i underdånighet afgifvet den* 17 *Juni,* 1859 *af den för ändamålet i nåder förordnade komité.* Stockholm, 1859. 4to, sdd. 95. Kritiskt Referat af Dr. C. G. Grähs. 8vo, pp. 39.

   The Project of Law, relating to the Management of Sanitary matters in the Kingdom, respectfully submitted on the 17*th of June,* 1859, *by the Committee appointed for the purpose; critically reviewed.* By Dr. C. G. Grähs. Reprint from the Hygiea.

I. In the first work in the above list, Professor Faye presents his readers with some valuable and interesting cases in obstetrical practice. We can here do little more than enumerate these cases. They are:—

1. Rapid occurrence of death after delivery, in consequence of the rupture of an ovarian abscess.

The patient, aged 29, primipara, of highly nervous temperament, had suffered for several months from a fixed pain in the right side; she spent a month in the Lying-in Institution prior to her delivery; inhaled chloroform during the labour; and was delivered, with the forceps, of a large living female child. She felt pains, during the night, in the lower part of the abdomen and back. Next morning the abdomen was rather tender, and the intestines were slightly distended with air; the pulse was 128, and small. The face was pale, with an appearance of depression; the pulse increased in rapidity; the patient got no sleep, and died in 53 hours after delivery. On post-mortem examination, the right ovary was found to have burst, and the slight remains of it were reduced to a

pulpy detritus. The fossa Douglassi was filled with a thin, red, purulent effusion. The kidneys were degenerated; there was apoplexy of the right lung. The author concludes some remarks on the foregoing case, by showing that the ovary may burst during delivery, even where no abscess exists, a fact important in a medico-legal point of view.

2. Rupture of the uterus during delivery, caused by a sharp margin of bone over the symphysis ilea pubis sinistra (Acanthopelys, *Kilian*). The portion of bone in question was a couple of lines in height, and three or four lines in breadth.

3. Rupture of the uterus and urinary bladder after difficult labour, with turning, in a case where the arm descended before the head; narrow pelvis.

The author states that, at the time he made the post-mortem examination of this patient, Kilian's then recently published work was not known to him, and the margin of the pelvis was not accurately examined. He thinks it very possible that, in this instance also, the crista pubis may have been sharp; and he suggests that in cases of rupture of the uterus, the margin of the pelvis should be examined, adding that we have, perhaps, too often contented ourselves with assuming that a slight degree of narrowing of the pelvis is the cause of the frequent ruptures in the lower segment of the womb.

4. Very tedious spontaneous delivery; pelvis narrowed in the first degree; aperture posteriorly in the portio vaginalis uteri, with a perforating opening through the curve of the vagina into the the peritoneal cavity.

5. Case of rupture of the fundus uteri.

6. Case of internal rupture of the uterus.

7. Diastasis of the symphysis pubis, in connexion with periuterine and pelvic cellulitis. On post-mortem examination, the separation was found to exist to the extent of an inch, the adjoining connective tissue being put upon the stretch, and the neck of the bladder having been separated from the wall of the pelvis. There was suppuration at the right side of the symphysis; along the horizontal ramus of the os pubis; the infiltration extending backwards in the connective tissue, in the broad ligament, and down on the neck of the uterus; the cartilage of the symphysis was destroyed. The pelvis was taken out, and preserved in the anatomico-pathological collection in the University.

8. Death occurring soon after an almost normal labour, and the employment of chloroform. The patient was unmarried; primipara, aged 35. Chloroform was inhaled, to a small extent, during labour. As, notwithstanding the violence of the pains,

the head remained stationary for several hours; the forceps was applied, and the head was with ease extracted. After the application of the forceps, and during the extraction, chloroform was again employed, and anæsthesia was produced during a short time. The patient returned to consciousness immediately, without, as is usual, lying for some time in a soporific condition. The pulse was 64. She slept for an hour. Subsequently she became more drowsy, and her face grew red. At midnight the pulse was 92. She was then quite conscious. At four in the morning she complained of slight shivering, with pain and heat in the head. Pulse 120. She afterwards lay like a person in a sound sleep; but was easily aroused when spoken to, and then complained only of faintness and weariness. At half-past seven her breathing suddenly became laboured and moaning; her face became cyanotic; only the second sound of the heart was heard; the pupils were contracted. She died, quietly, at a quarter past twelve, seventeen hours after the termination of the labour. On post-mortem examination, the liver and kidneys were found degenerated, and exhibited effusions of blood under their investing membranes; but nothing was discovered sufficient to account for death. The author is, therefore, led to believe that the chloroform, although sparingly and cautiously used, may have acted prejudicially in a person addicted to the abuse of stimulants.

II. For the report of the Lying-in institution in Christiania, we are indebted also to the distinguished Professor of Midwifery in the University of Norway. In the three years, 1855–1857, 644 children were born in the institution; twin-births occurring 11 times, or once in 57·54 deliveries. Of the children, 337 were boys, and 307 girls. 170 children were legitimate, 474 were illegitimate. 36 (23 boys and 13 girls) were still-born. Of the still-born children, 6 were legitimate, and 30 illegitimate. The proportion of still-born to the total number of births was, therefore, 1 : 17·88. Among the legitimate children, this proportion was 1 : 28·33; among the illegitimate, it was 1 : 15·80. Including two children who died during the first twenty-four hours, these proportions become respectively 1 : 28 and 1 : 15. Of the still-born children, 10 were the offspring of unmarried mothers, who had suffered from constitutional syphilis, and had been treated for this affection. It would appear that syphilis is diminishing throughout the country in general, but in one parish (Selbo) it has for several years been extremely prevalent; the local hospital there has, however, been abolished, and the patients are sent to Throndhjem.

"What share any decided variety of treatment may have in the above result, is difficult to say; but that mercurial treatment has, in general, been employed in most hospitals in the country, is certain. Another remarkable fact connected with this subject is, that the radesyge, allied as it is, or perhaps analogous to syphilis, has everywhere so remarkably diminished, that it is now reported as being comparatively rare. In this disease, too, mercurial treatment has, for many years, been most frequently employed in combination with so-called blood-purifying decoctions."

In reference to the question of the effects upon the children of diseased mothers, of subjecting the parents to the mode of treatment termed "syphilization," the author quotes the experience of Dr. A. Holst, who says that it has been stated to him that several children, born in the Lying-in Institution, of mothers who had undergone the treatment by inoculation with chancrous matter, had been still-born, or had subsequently exhibited the disease; as had also been the case with some in the division of the Royal Hospital appropriated to diseases of the skin, and to syphilis. It appears that of six children lately born in the institution, of such mothers, four were still-born, or died immediately after birth, while two were apparently in good health. The latter were, however, subsequently attacked, —one in the city, where it died; and the other, during its stay in the Lying-in Institution, which was prolonged, to give an opportunity of watching the child. In pointing out the difference between the so-called immunity obtained by syphilization, and the true immunity obtained by vaccination, the author informs us in a note, that (contrary to advice we, on a former occasion, ventured to give him), he has recently, in his own person, tested the immunity of persons vaccinated with respect to variola. During a slight epidemic of variola, which prevailed in the spring of the present year, Professor Faye, having first re-vaccinated himself, in the presence of some of his colleagues inoculated his arms and thighs three several times with the matter of genuine variola, from three different individuals, one of whom was an unvaccinated child. "The effect was the production of some small papulæ, which quickly disappeared, without giving rise to any general affection. This is true immunity." "No true analogy exists, in fact, between vaccination and syphilization; for when the former has been performed once, or at most twice, with good matter, the immunity, both of the skin and organism, will be general. A constitutionally-syphilitic person's skin is, on the contrary, susceptible of as many genuine soft chancres and furuncles as it

may be desired to produce; but the individual cannot receive the results of indurated chancre, because he already has them in his system, as true syphilitic poison; nevertheless, experience has latterly shown, and Ricord himself has acknowledged, that a person, cured of the disease by mercury, may again receive indurated chancre and syphilis. In other words, the syphilitic individual has become sound, and again susceptible to fresh infection; while the vaccinated and variolated individual has also become sound, after having undergone a change in his system, but is, thereafter, for a long time, really immune, with respect to fresh inoculation and fresh infection. This, therefore, makes the great and important difference; and, consequently, the immune vaccinated and variolated mother gives birth to healthy children; while the actually immune syphilized or syphilitic mother produces diseased children, so long as she is immune, with respect to the disease, but suffering from its influence in her ovaries and internal system.

"With reference to the effect of mercury in syphilis, the parish of Selbo may serve for an example. Various forms of constitutional syphilis have there, for a series of years, been so frequent, that it was found necessary to establish a provisional hospital. In this parish, the number of still-born children in the years from 1854 to 1858 was 34 (of which 3 were illegitimate) in 694 births—that is, 1 in 20·4. For the whole kingdom, the proportion in the ten years 1846–1855 was 1 in 23·5. The difference is, therefore, inconsiderable; and Selbo is even better than some other districts, where syphilis was not constantly prevalent. As the number of still-born children may vary considerably in one and the same parish, and the proportion in two of the above years, 1857 and 1856, was in Selbo so favourable as 1 : 26·6 and 1 : 29·5; the estimation of the sanitary condition of the infants, so far as this depends on a syphilitic dyscrasia in the parents, and its treatment, will be with more certainty based on the mortality in the first year of life, since, as is generally acknowledged, most of the children are born alive, and subsequently show signs of the presence of the dyscrasia. In the same parish of Selbo, among whose married population syphilis has existed more extensively than anywhere else in Norway, the ratio of mortality in the first year of life has, for the above-mentioned four years, been 1 : 16·1 This proportion is exceedingly favourable, as the mortality is only half that of the whole of Norway, during the ten years, 1846–1855. Now, when it is remembered, that the mortality of children, in the first year of life, in Norway (1 : 8·9) is highly favourable as compared with that in other

countries, this proportion for the syphilitic parish of Selbo is really remarkable, and bears advantageous testimony of the good effect of the remedies used. Mercury cannot, in truth, have been a "diabolical" medicine, as it has been called in our Magazine of Medical Science; and, so far as posterity is concerned, it seems better adapted to counteract the curse which rests upon the parents' sins, than the more modern methods,—whose followers are not satisfied with praising these, but, at least in some cases, condemn all, even the most conscientious efforts to use mercury in a successful manner. On reviewing each year separately, it appears, moreover, although there is a difference in the particular years, that in none of these years has the mortality in Selbo been as great as the average mortality for the whole land (1 : 8·9). Thus in 1854 there died in the first year of life,—of 178 children born alive, 14 = 1 : 12·7; in 1856 (there is no statement for 1855), of 171 born alive, 8 died in the first year = 1 : 20 4; in 1857, of 154 born alive, 6 died, = 1 : 25·6; and in 1858, of 157, 15 = 1 : 10·5; the mortality, therefore, even in the most unfavourable year, is less than that in the whole kingdom taken together."

Professor Faye concludes his very interesting report with a series of statistics, exhibiting the ages at which menstruation first occurred in a given number of cases; the interval between each menstruation in 309 cases; the duration of each menstruation in 287 cases; the influence of suckling upon menstruation; the duration of pregnancy in a certain number of instances, &c. The details will furnish much valuable information to the practical obstetrician.

III. Dr. Grähs' pamphlet, which is in itself a review, is an important contribution to the subject of sanitary reform. The author appears to be well acquainted with our English official reports, and with the works of British writers on the topic of his critique.

Advice to a Mother on the Management of her Offspring. By PYE HENRY CHAVASSE, ESQ., F. R. C. S. London: Churchill, 1860. Fifth Edition. Fcap. 8vo, pp. 255.

IT would seem that we have already exercised our critical pen upon a portion, at least, of this work, when reviewing Dr. Barker's "brochure" on a similar subject in May, 1859. Our readers are, probably, aware of the discreditable squabble which took place soon afterwards. Dr. Herbert Barker was unques-

tionably wrong in quoting from Mr. Chavasse's work without acknowledgment; he was wrong also in not instantly acknowledging and apologizing for the wrong. Mr. Chavasse, or his solicitor ("qui facit per alium, facit per se"), was rude in his mode of application to Mrs. Barker, in her husband's absence; and the anger generated by this proceeding blinded Dr. Barker to the course he ought to have adopted. Matters, however, were not to end so simply; the medical men of Birmingham entered their protest, and the Branch of the British Medical Association expelled Dr. Barker. We think it was before this latter occurrence that Dr. Barker made a full and ample apology; but, notwithstanding, the Branch refused to reinstate Dr. Barker. We have, in our simplicity, been accustomed to think that, when an offender makes a sufficient apology, he should be forgiven; but if, in addition, he has been severely punished, the offence may surely be forgotten.

Mr. Chavasse, we hope, will take in good part our suggestion, that he should allow the matter to drop into oblivion; he has vindicated himself, and punished Dr. Barker; and to carry the matter further would scarcely be like a gentleman or a Christian.

We have read through Mr. Chavasse's book, and agree with most of his suggestions. The advice is just such as might be expected from a sensible man, well acquainted with hygienic and sanitary laws and their application. The form of question and answer is, in some respects, convenient for popular use; and in this catechism we have included advice concerning the food, nursing, washing, exercise, &c., of infancy, with a notice of the chief ailments, so far as may enable the mother to recognise them, but nothing beyond the simplest treatment. The author, very properly, advises that active treatment should only be authorized by a medical attendant. But the volume is not limited to the necessities of infancy; it embraces the general and special management of childhood and youth.

It is rather difficult to analyze a book of this general character; and we shall content ourselves with pointing out a few sections that we think very good, and recommending the book itself to our readers. The remarks upon the clothing of infants are good, though we do not quite agree with the author in limiting the use of caps. We have seen much more mischief than good in the habit which now prevails of abjuring them. We quite agree with the author in the propriety of putting the child early to the breast, provided that it be not repeated so often as to make the nipples sore before the milk comes. He advises that for six months the child should have no other food than

mother's milk, if the mother be sufficiently strong. In most cases, however, we have found it of advantage allowing one meal (from the feeding-bottle) a day, just to accustom the child, as it may happen from various causes that the mother may be unavoidably absent at the time when baby ought to get his drink. The section on the best food as a substitute for nursing, is exceedingly judicious, and so are the directions for choosing and dieting a wet-nurse, except that we should think his moderate diet rather high feeding in this country.

The notes on the various minor complaints of infancy and childhood are sufficient for the mother's guidance, without qualifying her to supersede the doctor.

We quite agree with Mr. Chavasse's indignation at the present mode of dressing children, both boys and girls, and also in his objections to stays—would that we might hope his arguments would banish them. But fashion is the Juggernaut of civilized society, under whose wheels whole hecatombs are crushed.

Exercise, diet, sleep, clothes, wounds, bruises, and accidents, all in turn occupy the author's attention; and, if they are carefully read and observed, we are sure that the rising generation of Birmingham will have to thank Mr. Chavasse.

Incidentally, also, much good advice is given for the prevention of disease in young persons, as to choosing a profession, and the over-exertion of the intellect, with which we cordially agree.

We have said enough, surely, to recommend this little volume, and we should be glad to see it largely circulated among all classes.

Academisch Proefschrift over Ulcus Noma. Door Adriaan Jacob van Zadelhoff. Utrecht, P. W. van de Weijer. 1860. 8vo. pp 56.

An Academic Thesis on Ulcus Noma. By A. J. van Zadelhoff. Illustrated with two plates.

The author gives two very good drawings of the formidable disease he describes,—one exhibiting the extent of its ravages in his seventh case; the other representing the head of a child who died with ulcus noma of the upper lip, cheek, and nose, and showing the facial and fifth nerves exposed.

Two of the branches of the facial nerve, directly lost in the gangrenous part, were swollen, and quite red, with injected ves-

sels; the bone beneath the orbit was completely stripped of its periosteum, and was in a state of necrosis. The infraorbital nerve proceeding thence towards the sphacelated part was entirely surrounded with fat, so that it was difficult to separate the nervous twigs from the adherent adipose substance.

On opening the skull, it was found that the root of the fifth nerve on the left side was quite brown to its insertion into the pons varolii, in consequence of an exudation and effusion of blood, which on this side completely filled the entire sinus cavernosus. This brown colour extended over the Gasserian ganglion, and the three branches issuing from it. The sixth nerve, also, was very red, and the space between the two was filled with coagulated blood. The corresponding parts on the right side, as well as the optic nerves and their decussation, appeared to be healthy.

"On microscopic examination, it appeared that the nerve fibres of the infra-orbital, after its exit through the foramen, were everywhere surrounded with fat granules, while the primitive filaments were all in a state of decided fatty degeneration. The nerve-root, which on the left side throughout exhited a brown colour, was likewise in a state of fatty degeneration; everywhere around the nerve-tubes themselves numerous fat granules and longer fat cells appeared. On the right side this fatty degeneration was by no means absent, but it existed in a less degree; in the nerve-tubes were several granules, which had not yet so strongly coalesced to form longer fat cells. Around the nerve-tubes, and between them, several fat globules were, however, scattered.

"From all this it would appear that the degeneration had attacked the infra-orbital nerve chiefly in its peripheric portion; that the affection was more marked on the left side, where, moreover, ulcus noma usually begins; that this degeneration seemed to have penetrated from the periphery to the centre through the root, particularly as on the right side the degeneration of the nerve external to the infra-orbital foramen seemed to differ little, or not at all, from that of the left side, while the root of the fifth nerve on the right side was less decidedly affected than on the left.

"But the discoloration of the nerve of the fifth pair on the left side, and the great filling up of the left cavernous sinus with blood, which had here everywhere exuded, were very striking.

"The remarkable fact, that ulcus noma almost always attacks the upper lip, so far as the branches of the infra-orbital nerve extend, appears to indicate that in the origin of noma

this nerve plays no unimportant part. Froriep, too, found the infra-orbital nerve degenerated external to the foramen. The facial nerve can contribute less to the disease, as being a motor nerve, which does not terminate in the skin; the two branches of this nerve, which were in the present instance tolerably inflamed, were precisely those which are connected with the infra-orbital nerve, and receive from it recurrent sensitive filaments. In ulcus noma, the affection is confined chiefly to the skin and mucous membrane, and exactly in these parts do the branches of the infra-orbital nerve terminate.

"It is remarkable that such a degeneration and gangrene of so extremely sensitive a nerve should take place without pain.

"The nerve itself was affected with fatty degeneration, which fatty degeneration occurs wherever a part is dissolved or in process of destruction; so, softening of the nerves, as has often been observed by my esteemed promotor [the distinguished Professor Schroeder van der Kolk], is accompanied by fatty degeneration.

"It would thus appear, particularly if we bear in mind the universally admitted observation, that ulcus noma occurs principally where mal-assimilation of blood, improper diet, and debilitating causes, especially measles, operating chiefly on the process of sanguification, have preceded, that the first pre-disposing cause of this malady is to be sought in a peculiar condition of the blood and fluids. It seems as if in this state the second branch of the fifth pair is preferentially affected, although ulcus noma sometimes also occurs in the sexual organs. It is not very easy to account for this; but it may be supposed, that where the blood is in a dissolved state, and combined therewith, the nervous energy is weakened, congestion and stasis arise in the cavernous sinus, as at least in my case took place to a great degree, on the left or more affected side; that the nerve, through insufficient nutrition, for want of pure arterial blood, passes into paralysis and decay; while, not improbably through the infiltration of fluid and fatty degeneration, the infra-orbital branch, running through such a long, bony canal, is so compressed, that the weakened and relaxed walls of the capillary vessels, being closely pressed on, can no longer nourish this nerve: whence it might be explained why the infra-orbital nerve is preferentially the most affected. In this way, also, we may understand how the abuse of mercurials may give rise to ulcus noma, as mercury appears to act chiefly on the salivary glands, and therefore also on the nerves of the fifth pair, and to occasion a solution of the blood.

Thus, by increased exudation of watery blood, swelling of the nerve, gangrene, fatty degeneration, and ulcus noma, may be produced.

"As to the blood-vessels, we here meet with the same change which ordinarily occurs in gangrene. Both arteries and veins are filled with a plug of coagulated blood, which adheres so firmly to the walls of the vessels, that it cannot be driven out by injection, but prevents the further progress of the latter. Hence, the parts whither the blood-vessels repair, are no longer supplied with blood, and die. Consequently, the vaso-motor nerves, which proceed from the fifth pair to the blood-vessels, here again, most probably, play a very important part."

We have quoted rather fully from the author's observations on the pathological anatomy of the affection which he has chosen as the subject of his academic thesis. The other points connected with this formidable disease are treated of, in his essay, in an equally able and interesting manner.

Traité des Tumeurs de l'Orbite. Par M. Demarquay. Paris: Victor Masson, 1860. 8vo, pp. 584.

This rather considerable octavo, spread over the surface of 584 pages, is devoted to the consideration of all tumours of the orbit, whether *arising in it* or *encroaching on it*, with the exception of all such tumours as have their origin in the ball of the eye itself. It is divided into four books, each subdivided into chapters, and again re-subdivided into sections. For its compilation, the author has amply availed himself of the researches of others, upon whom he draws much more freely than on his own experience. He, however, frankly acknowledges it throughout his book, and even adds, at the end, a copious list of the sources to which he is indebted, and which includes no less than 142 names.

He arranges all tumours in four classes, viz., tumours having their origin externally to the cavity of the orbit; tumours of the areolar tissue of the orbit; tumours of the orbit proper. A book is devoted to the consideration of each, and a fourth book contains a sort of recapitulation of the others. A more unsatisfactory arrangement could not have been conceived—indeed, we do not profess even to understand it; for it seems to us that tumours of the areolar tissue of the orbit must of necessity be tumours of the orbit proper.

The subdivisions of each book are equally prolix and unnecessary: for instance, chap. 2 of book iii., which is devoted to the consideration of bloody tumours, is divided again into two

sections—1st, tumours by extravasation; 2nd, aneurismal tumours; section 1st being again re-subdivided into four subsections:—

A. Effusions of blood, result of fractures.
B. Effusions of blood, result of penetrating wounds.
C. Effusions of blood, result of contusions.
D. Spontaneous effusions of blood.

We need not proceed further, as this is a sufficient illustration of the present instance of book-making.

We have, however, read the book (no easy work); but we cannot say we have derived much instruction from it. While on the subject of syphilitic exostoses of the orbit, he quotes Carron du Villards, who extols the preparations of gold in the treatment of them. We have no doubt of their efficacy in cases of secondary and tertiary syphilis; we have watched their administration in several Continental hospitals, and have been well pleased with the results; and we cannot help regretting that their use seems to be entirely ignored in this country. The supposed high price is no excuse of their non-adoption, because, though at first sight gold appears an expensive remedy, yet, as the medicinal doses are exceedingly small, they fully reduce it to the average cost of ordinary remedial agents.

Speaking of serous cysts of the orbit, the author remarks that the presence of hydatids in them, although denied by Mackenzie, is not uncommon; and he imagines that much of their supposed rarity depends on their having escaped detection. He gives credit to Mr. Lawrence for having supplied one of the first well-authenticated cases of orbital hydatids.

Having exhausted the subject of serous cysts, he passes to the consideration of what he calls "Hydropisie de la Bourse fibreuse de Tenon"—a disease which, though a frequent cause of exorbitism, is not, according to our author, found described in any of the existing works on ophthalmology, and the first notice of which is due to M. Carron du Villards, in 1858.

Before proceeding with one of his cases, which we intend giving *in extenso*, we wish to premise that this "Bourse fibreuse de Tenon" is no other than the tunica vaginalis oculi, *first* described by O'Ferrall, many years ago in the 19th Volume of this Journal, 1st series; as also to express our doubts as to its being a true sero-fibrous shut sac, rather than one of those anatomical structures that, with a little careful manipulation and ingenious dissection, we were in the habit of exhibiting in the dissecting-room. Here is the case, as extracted from M. Carron du Villard's "Memoir sur l'Exophthalmie," in the "Annales d'Oculistique, 1858":—

"In 1842, a girl, aged 17, presented herself for advice, suffering from considerable exophthalmos, accompanied by very severe pain whenever she bent her head forwards and downwards, as also whenever the eye was pressed backwards, with a view to restoring it to its original place. The eye itself seemed to be everywhere embraced by a firm tumour, without any alteration of the conjunctiva or the cornea, but with absolute loss of vision. Believing it to be a case of fibrous tumour completely surrounding the eye, we recommended the removal of the entire mass, which was filling up the orbit; and at once performed the operation without previously trying an exploratory puncture. As the operator gave the last stroke of the scissors to divide the optic nerve, a quantity of straw-coloured liquid ran out, and *the eye at once resumed its natural form.* But it was then too late to attempt to save the organ, and the operation was completed.

"On the eye being placed under water, it at once acquired the form it possessed previous to the operation, and on carefully removing it from the water, the fluid was found to run out by an opening situated inferiorly and corresponding to the fibrous ring from which arises the 'Bourse de Tenon.' On further examination, the eye was found perfectly healthy, but surrounded by a sac as far as the junction of the cornea with the sclerotic; and which, having been distended by fluid, had given it the appearance it had previous to the operation."

Carron du Villards has several times since met with this affection, which he has successfully treated by puncture. It appears to him to be intimately connected with some forms of eruptive disease, as every case he has met with had come on after measles or scarlatina. The treatment recommended is as follows:—The eye having been fixed by the usual means, and turned inwardly, a fold of the conjunctiva, including the bourse of Tenon, is pinched up, and incised with a pair of blunt-pointed scissors. As the fluid runs out, the eye will have at once a tendency to resume its place in the orbit; but that must not be permitted until a few shreds of charpie have been introduced into the wound, and which are to be left in for twenty-four hours, at the end of which time a sufficient degree of adhesive inflammation will have been established to insure a radical cure.

The most prominent fact which we gather from the foregoing melancholy story is, that, in the year 1842, M. Carron du Villards did destroy the eye of a girl 17 years of age. We cannot even add, *secundum artem;* for who would, at the present stage of ophthalmic surgery, proceed to remove the entire contents of the orbit for a case involving only the globe

of the eye? In this country we are happy to think that such a mishap could not occur; as, even should the surgeon have made a false diagnosis, and mistaken a serous cyst for a fibrous tumour, and determined to remove the eye, the very first incision made to separate the muscles of the eye from the globe itself would, by wounding the sac of Tenon, have revealed the nature of the case.

While on the subject of malignant disease, the author tells us that, up to this, it has not been the subject of any special study. This at first surprised us, till, further on, we were reminded that cancer arising primarily from the intraorbital tissues is rare; that it commences oftener in the ball of the eye itself; and, as diseases of the eye do not come within the scope of his book, he passes it over in silence.

At last we have arrived at Book IV., which treats of orbital tumours in general. These are the principal causes the author recognizes as tending to produce them:—Syphilis, cancer, and penetrating wounds. Cancer is, however, much the least frequent; while, among penetrating wounds, the most frequent are those arising from *umbrella thrusts*. This fact he mentions more than once, thus revealing to us a previously unnoticed idiosyncracy in our lively neighbours and faithful allies, viz., of having a tendency to poke out each other's eyes with umbrella sticks.

Small-pox and Vaccination, Historically and Medically considered: an Inquiry into the Causes of the recent increase of Small-pox, and the Means for its prevention. By ALFRED COLLINSON, M. D. London: Hatchard and Co, 187, Picadilly. 1860. Pamphlet, pp. 85.

UPWARDS of half a century has elapsed since the introduction of vaccination. The efficacy of cow-pox infection as a prophylactic against variola was, at first, most justly, an object of jealous scrutiny. The *experimentum crucis* having been applied at every step of the investigation, after a most rigorous trial, its protective power was placed beyond a doubt; the laws of its phenomena were fully and, it was supposed, finally established; the practice of vaccine inoculation was generally adopted; and the minds of a former generation were set at rest, so far as regarded variola. Strange, then, that at so distant a period from the date of its first universal employment, we should find ourselves, at the present moment, in a perfect fermentation on the subject of vaccination, both as regards its principles and practice.

The recent epidemics of small-pox in this and the sister country have, it appears, shaken the faith of the people in the protective power of cow-pox. The profession, on the other hand, still convinced of its efficacy as a prophylactic, is divided into two sections with respect to the cause of the recent variolous outbreaks. One segment accounts for them in the deterioration of lymph, consequent on its transmission through so many beings. Whilst the other—and perhaps with more propriety—deems that these untoward events were due to the number of persons who remained in an unprotected state, because of an imperfect system of public vaccination. There exist, doubtless, some extraordinary characters amongst us who will be found to ignore vaccination altogether. "Allowance," says Simon, "must be made for personal eccentricities, which—in respect of vaccination, as of every other subject—have ever caused solitary voices to be raised against the common convictions of mankind." These are, fortunately, so few, and so insignificant as a class, that we take no cognizance of them.

Be the cause of the recent brushes of small-pox what it may—whether deterioration of lymph, the mal-administration of vaccination amongst the masses, or anything else that human ingenuity can suggest—one thing is certain, which is, that Government must take the vaccination of the empire into its own hands. Such being the general impression amongst the profession of every grade, we find ourselves daily inundated with all manner of publications on the subject. Some of these are written on the plea of pure philanthropy; others with the apparent intention of exposing the defects of existing institutions, but, at the same time, exhibiting the capabilities of their various authors for remedying those defects. All have a tendency to attract the attention of the powers that be, to the humble individuals who so modestly obtrude themselves. In this latter respect the pamphlet under consideration, however, assumes no disguise. It is addressed to the Right Hon. the Earl of Granville, Lord President of Council, &c., "by his Lordship's favour and permission, by his obedient and humble servant, Alfred Collinson."

The "purpose of the following pages" was, of course, not to address the Earl of Granville; on the contrary, it was "*to develope, if possible, the causes of the increase of small-pox, and to point out the means whereby vaccination, its only sure preventive, may be restored to its* PRISTINE[a] *efficacy.*" To accomplish this, the author finds "it necessary to trace the history of

[a] The capitals are our own.

small-pox and that of vaccination in (*sic*) its various phases," and we would add, send the sketch to the Earl of Granville.

We are informed that "a mass of observations and experiments on the important subject of small-pox and vaccination has been collected by numerous observers and inquirers; but it is scattered over an infinity of histories, treatises, reports, and statistical returns, for the most part unknown to, or inaccessible to, the general public." Therefore, in the small space of 85 pages—indeed, we may say of little over 60—the author, to his own satisfaction, at least, condenses the subject from "an *infinity* of histories, treatises, reports, and statistical returns," to present the public and a noble Lord with a perfect, yet compact, treatise on vaccination. A great desideratum truly! Oddly enough, however, we are informed—and who is ignorant of it? that "a perfect mine of knowledge and information on this subject *has been collected* by Mr. Simon, the medical officer of the Privy Council, and communicated by him in his valuable report on vaccination to the Board of Health in 1857, in another general report in 1858, and a shorter one to the Privy Council in 1859."

Now this excellent, complete, and succinct account of the origin and progress of vaccination; of the ravages of small-pox anterior to its introduction; and the benefits conferred on mankind after its adoption, is accessible to all who may wish to consult it, especially so to the Earl of Granville. This is indeed *the* "*mine*" from which all the pamphleteers on vaccination draw their materials, and the one which the author, in common with them, has availed himself of.

In this noble report of Simon's, the following passage occurs:—"Looking then to the whole succession of answers, and describing, in a few words, what to myself has been the effect of perusing them, I would say—above all—I am struck with their concord. Two hundred and thirty years have elapsed since Harvey first taught the circulation of the blood. The first announcement of Jenner's discovery was within the adult-memory of men still living; yet, I believe, that questions addressed to the governments of Europe, and to 542 professors and practitioners of medicine, with respect to the older truth, basis though it has long become of all physiological teaching, would not elicit more unanimous replies than these which record the triumphant successes of vaccination. It can be no common certainty which commands so general an assent. It can have been neither a truthless nor a barren doctrine, which within sixty years from its rise, has all but universally satisfied private judgment, and has converted nations to be its grate-

ful followers." Surely no language could more simply or forcibly attest the value of vaccination, or, as a consequence, the danger of its omission, or mal-administration. And from Simon's report at large, it strikes us, one could have no difficulty in arriving at "a sound opinion" on the subject upon which it treats. Yet, we learn, that the author's "end will be sufficiently attained, if he can *succeed in fixing attention*—more especially that of persons in authority—on the danger to which the country is exposed, and the means of averting it." "The only merit," he continues, "I can venture to claim is, that of having collected and supplied from various sources materials from which a *sound opinion* may be formed as to what is necessary to be done. If I have succeeded herein, my labour will be amply rewarded."

The "ends" of pamphleteers are always expressed, but generally understood differently from their expression,—whether correctly, or the contrary, may, of course, be a matter of question. Here we have an author of a pamphlet, written for the end of "fixing attention—more especially, that of persons in authority," upon a subject on which their attention *has been* repeatedly, forcibly, and *officially* drawn by the medical officer of the General Board of Health. We can only say, that if Mr. Simon's brilliant efforts have failed in *fixing attention* of persons in authority upon the vaccination question, we can scarcely hope for such a desirable consummation from Dr. Collinson's publication.

But we had better not "go too fast;" we must remember that this pamphlet has been addressed to one in authority, by "the favour and permission" of that individual. Therefore, it may occur, that what Simon's work failed in accomplishing, Collinson's shall happily consummate.

Let us now look into the contents of this opusculum. We find, upon a close perusal, that it contains nothing with which we were not before acquainted; and but little that the general public could not learn from any popular cyclopædia of the present day. There is some matter, certainly, relative to vaccination acts, &c.; but with these every poor-law guardian is intimately acquainted.

The subject of the antiquity of small-pox, "whether it was known to the ancient world, and, if so, to what extent," first engages our attention; and Rhazes, Hippocrates, Galen, Hahn, Willan, Barron, *et hoc genus omne*, are brought before us, pretty much in the same order as they appear in Dr. Gregory's article, "Small-pox," in the Cyclopædia of Practical Medicine, edited by Forbes and Tweedie.

The author, keeping in view his end, quotes Mr. Simon, to show that *people in authority* are not exempt from variola. How "a sad illustration of its impartial severity is to be found in the family of *our own* King William III." How his father and mother; his wife, his uncle, and his cousins, fell victims to small-pox; how even his own royal self was not respected by that loathsome disorder,—his constitution having been permanently shattered by it. Mr. Simon's version of this historical fact could not have had the same effect as Dr. Collinson's narration of it. In this country there are some who think that variola showed much too great a deference to his majesty's family in sparing himself. The old story of Lady Hester Stanhope, and the introduction of variolous inoculation, its imperfections and danger as a practice: and we are brought to the eighteenth page.

Next we have Jenner, and the origin of his inquiries concerning cow-pox; a brief account of the inductive reasoning of Jenner; the vaccination of the boy Phibbs from the hand of Sarah Nelmes, and the subsequent testing; the opposition to the practice of vaccination, and its final establishment; the question, what is the vaccine disease—and we arrive at the forty-fifth page.

Then comes the effect of vaccination after its general adoption, as shown by statistics taken from Simon, which brings us to the fifty-first page.

The remainder of the pamphlet is the only portion to which we shall direct particular attention; but, before doing so, we would observe, that all the subjects which have been briefly recapitulated above, are almost as briefly handled by the author. Badly compiled from one or two sources, and infinitely more curt than any chapter on vaccination from an ordinary medical class-book, or almost any article we have read in popular publications touching on the subject.

Dr. Collinson now essays "to develope the causes" of the increase in the mortality from small-pox; he feels "persuaded that the present severity of small-pox, and the impermanence of vaccination, cannot be considered as accidental circumstances, and that we cannot inquire with too much anxiety or earnestness into the causes which have induced this lamentable state of things." Four causes are assigned by the author, viz., "bad vaccination; deterioration of the lymph used in vaccination, from long descent; the want of an adequate supply of good vaccine matter; and the absence of Government interference, and of efficient legislation to enforce the universal practice of vaccination." Bad vaccination, the want of adequate material,

and absence of sufficient government control, may come under the head, we would say, of mal-administration of vaccination—as one cause for the recent outbreaks of variola; and deterioration of lymph is presumed by some to be the other. Thus, Dr. Collinson's causes may be reduced from four to two. But we shall proceed with the author. By bad vaccination is, of course, to be understood, the want of knowledge for the discrimination of the proper vesicles, and ignorance of its phases at certain periods; the absence of careful supervision; the choice of imperfect or unfit virus; or the insertion of perfect virus at an improper time—in short, as our author very properly observes, the practice of vaccination contrary to the directions laid down by Jenner. Of this, there can be no doubt. There is no practitioner who would not feel offended, if informed that he was ignorant of the principles and practice of vaccination; and yet there is no branch of medicine concerning which so much ignorance can be found amongst the profession. We have ourselves witnessed eminent practitioners deem vesicles fit to take from, for the purpose of ingrafting, which Jenner would certainly have discarded. The majority of medical practitioners (so far as this country is concerned) never saw a vaccine vesicle, or its progress through its different stages, till the first vaccination they themselves performed, when appointed to their respective dispensaries. We therefore agree with Dr. Collinson that bad vaccination is a fruitful source of absence of protection. We are glad to see, however, that the English College of Surgeons are endeavouring to remedy this evil, by demanding a certificate of instruction in vaccination from candidates for their diploma; and we trust our own Colleges will follow such an excellent example.

Concerning the deterioration of the vaccine virus from continuous transmission, the author mentions the difference of opinion existing among members of the profession; with which we are, of course, acquainted. He quotes Simon on this point, also, who, though he refrains from offering a decided opinion of his own, yet says, "It is difficult to conceive how the infantine generations of a country could, crop by crop, successfully derive less permanent constitutional impressions from vaccination, unless the efficient cause of those impressions—the vaccine contagion itself—had year by year undergone enfeeblement of its powers." But it happens, as the author also informs us, that the National Vaccine Establishment, in their annual Report in 1854, state that it is "A fallacy to predicate the necessity of resorting to the original source of the cow for a re-

newed supply of lymph." Now, as Mr. Simon, from his own resources, and from the opinions of others, ought to know something of vaccination, and as the National Vaccine Board must likewise be considered a very high authority on the same, and yet it is found that the former speaks with doubt, and the latter with certainty, relative to the question of deterioration of lymph,—when one of these great authorities can scarcely come to any other conclusion, than that vaccine has, year by year, undergone enfeeblement; and the other positively states that the necessity of its renewal is a fallacy,—the author modestly remarks—"non nostrum est tantas componere lites." Dr. Collinson, however, arrives at the very natural conclusion, under such circumstances, to the following effect: if there be a doubt, there can be no harm in having a recurrence to the cow; it is in our power to inoculate cows with variolous matter, from which we can obtain a renewed vaccine, wherewith to infect the unprotected. This method has been already frequently recommended; we have no objection to accepting it, but there is nothing new in the suggestion, and this is Dr. Collinson's great remedy to reduce vaccine to its pristine efficacy.

The defective supply of vaccine infection, as a cause of want of protection, is next mentioned; here we are favoured with an extract from a minute of the Board of the National Vaccine establishment, of Nov. 17, 1858, as follows:—

"That, in 1838, the number of vaccinations performed by this national establishment was, 18,659; that during the three years, 1850–52, the annual average number was, 10,713; that during the three years, 1854–6, the average number was, 8207; and that in 1857, the number was 6327; and that while the operation of successive laws has reduced the number of vaccinations, from which lymph has been supplied to the public, the demand for lymph has been increasing; that ordinarily the vaccine establishment distributes about 215,000 charges of lymph;, but that, under the influence of peculiar circumstances, the demand has risen to about 320,000 charges—an amount nearly 60 per cent. higher than was supplied in 1838, when the sources were nearly three times as numerous as they are at present."

Upon this the author observes, and very justly—

"From this important statement of the National Vaccine Establishment it seems impossible to doubt that the general effective vaccination of the country must have suffered materially from the crippled resources of this valuable establishment. It is even not impossible that their limited power of selection, under the pressure of so great a demand, may have led them to arm their charges from vesicles which a more extensive supply of subjects would have permitted them to refuse."

Now, though all this may be very true, and supposing the National Vaccine Establishment had been the unwilling means of diffusing doubtful lymph; if vaccination was properly conducted, equivocal results from this uncertain source could have been detected, and measures adopted to revaccinate such suspicious cases, till all uncertainty was removed. Were vaccination properly conducted, this great demand would never have been made on the National Vaccine Institution. So that the imperfect protection cannot be said to *depend* so much on defective supply, as upon the inefficient, careless, and improvident method of conducting public vaccination, in addition to the want of administrative interference; and this brings us to the fourth cause of malprotection, as mentioned by the author.

With respect to legislative interference in relation to vaccination, the author gives examples in the enactments of foreign governments, making the practice compulsory; and showing the benefits accruing therefrom.

The zeal of the Continental legislatures in this respect far surpassed that of our Government, the sole act of which, up to the year 1840, was the establishment of the National Vaccine Institution (England), in 1808. This institution had no powers to extend the practice of vaccination; and, till 1840, England was indebted for public vaccination to the zeal of medical men, or to the charity of the public.

Three years prior to 1840 it was held that "an overseer was not bound to take measures to procure the poor children of the parish to be vaccinated during the prevalence of small-pox." During the three years "of this charitable (?) vaccination, prior to 1840," the author states, "there occurred thirty-six thousand deaths from small-pox; and three-fourths of those who so died were children under five years of age, who had never undergone the operation."

Dr. Collinson next mentions the two Acts of the Legislature, viz., the one providing "that vaccination, at the public cost, might be claimed of local authorities in every parish in England and Wales; and that this gratuitous vaccination should not place its recipients in the position of persons receiving parish relief;" and which failing, the other, or the compulsory Act of 1853.

We shall quote his statement of the working of this last Act:—

"In 1854, the public vaccinations of England, at all ages, exceeded by more than 75,000 the total number of births. The result of this act was, that the deaths from small-pox reached an

average of only 152 per million of people. But in 1855, the number of vaccinations declined; and in 1856, it was still further reduced. *The misfortune was, that no public officer was appointed to carry out the provisions of the Act. There being no one whose duty it was to enforce the penalty, its coercive effect was soon lost.* It is more than probable," he continues, "That if its commands had been enforced with firmness by a proper officer, *there would be few unvaccinated persons at the present time, and the mortality from smallpox which has recently occurred would have been materially smaller.*"

This is most true. The Legislative enactment is insufficient, and this insufficiency is a great cause of imperfect protection. Thus Simon, in fewer words, though more forcibly, has previously taught us—"In short," he says in his great Report, "it is a radical defect in the Act, considered in its compulsory relations, that the duty of warning defaulters, and the discretionary power of proceeding against them, are assigned to no proper officer or local authority; and that, consequently, the compulsory provision of the law *rapidly tends to be regarded as a dead letter.*"[a]

Now for Dr. Collinson's remedies; and first, as to "re-vaccination." The author argues that, as its necessity is a matter of doubt, the benefit should be given to the doubt, and re-vaccination adopted after puberty, as a precautionary measure.

Next, there should be "good vaccination;" that is, the operation should be carefully and skilfully conducted by medical practitioners who are really competent to undertake it; and lymph should be husbanded, when perfect, most carefully.

Lastly, the defects of the Act should be remedied; and if faith has been lost in the present stock of vaccine infection, a new supply should be created by the variolous inoculation of the cow.

We have now given a pretty full review of Dr. Collinson's pamphlet, and confess we have not been edified by its perusal, as we have previously led the reader to believe. It is a wretched compilation, unnecessary, even was it otherwise, after that unsurpassable Report of Simon. We again assert, if that masterpiece of a Report from the Medical Officer of the Board of Health has failed to impress the public *and the powers that be* with the importance of vaccination—if that has not shown us the defects of the present system of vaccination, as regards England—and if from it, there cannot be obtained suggestions for the better protection of the people from variola—surely Dr. Collinson's gleanings can be of no avail.

[a] *Vide* "Papers relating to the History and Practice of Vaccination," Simon p. lxxii.

Having now disposed of Dr. Collinson's pamphlet, which relates altogether to the vaccination of England, it may not be out of place to make some observations upon the system of vaccination as adopted in Ireland.

In this country, the vaccination of the people is under the complete control of the Poor-law Commissioners. Vaccination districts have been mapped out in the various dispensary districts throughout Ireland. In each of these, the "Medical Officer" (as the vile phrase runs) has to attend at stated periods, and vaccinate all who come to him for that purpose. The names of those in whom lymph has been inserted are entered in a book provided for the purpose; and the result of the operation subsequently mentioned. Apparently, all is most perfect and excellent. To render still further impetus to vaccination, the ardour of the medical gentlemen in charge of these districts is, in a wonderful manner, stimulated by the recent Act—21 and 22 Victoria, cap. lxiv., passed in August, 1858—whereby the munificent sum of *one shilling!* for each *successful case* is promised to him, provided, however, that he returns no less than *twenty* such cases!

Prior to the passing of this Act, vaccination could scarcely be said to exist in Ireland. Now, as the results of this twelve-penny charm, we are presented by the Poor-law Commissioners with the following cheerful and satisfactory state of affairs. Alluding to this Act, viz., the 21 and 22 Victoria, cap lxiv., the Commissioners, in their last Annual Report, observe, that having been "now in full operation for nearly a year, we are able to speak with some confidence, from experience of its operations, respecting the efficacy of the Act." And they then present the highly gratifying result of 140,411 vaccinated for the year 1859.

Could we rely upon these 140,411 cases for the year 1859 as *genuine*, the retrospect would, indeed, be gratifying, so far as the working of the Act, and the vaccination of the country were concerned; but, on the other hand, a melancholy one, as regards the profession. In its latter bearing, it would be the exemplification of a principle of homœopathy, viz., the greatest amount of stimulation by an infinitesimal quantity of the element 'argentum.'

To our mind, however, this Act has proved hostile to the progress of vaccination, as we shall presently show; and injurious to the profession, holding out, as it does, a temptation—villanously low though it be—to the unprincipled, for all manner of dishonesty.

In order to show that our opinion is correct, let us consider

how vaccination should be conducted, in a purely medical point of view. The subject seems so trite, as to be unworthy of much attention. Indeed, its apparent simplicity has, to a considerable extent, been the origin of carelessness. However, to conduct vaccination with benefit to the public, we consider the following rules are essential:—

The insertion of the lymph must be accomplished with care, and without haste.

The infection used must be taken from a fit source, and introduced into the system of those only who have no contra-indication for vaccination present.

The recipient must be seen on the *eighth and twelfth day.*

No case should be *positively considered successful, unless seen on the eighth and twelfth day, and found "natural" on each inspection.*

A very slow vesicle on the eighth day should be tested from itself—that is, some of its contents inoculated on a fresh place near it, or on a spot upon the other arm, and the result observed on the sixteenth day; and if the result is not then "natural," re-vaccination should be at once performed, and further inspections should follow.

A vesicle which, when seen on the eighth day, presents a rubbed or injured appearance, should be seen on the twelfth and sixteenth day, as well as on the eighth; and if not in a state that could be vouched for at its last inspection, it should be reckoned doubtful, marked as such in the register. The arm should be again inspected in a few weeks; and if the cicatrix is then found unsatisfactory in appearance, re-vaccination should be performed, to test the former attempt.

All this, to be done, faithfully and well, would require no common skill and attention; it would entail considerable trouble and consume much time.

Any district in which such a system was not adopted we would consider to be imperfectly vaccinated; and in the returns of such a district we would put no faith.

Is such the method adopted in the vaccination of the inhabitants of the various districts throughout Ireland? How many vaccinators can conscientiously swear that every case returned by them as successful, and for which they have been paid, was a *bonâ fide* case of successful vaccination? Did they see them all on the eighth day, and if so, was every case so seen genuine and perfect in its appearance; were none rubbed; were none slow; were none doubtful? If some of those seen on the eighth day were slow, some rubbed, and some doubtful,

were all these returned indiscriminately as successful cases? Has any public vaccinator in Ireland seen, one-fiftieth part of those he saw on the eighth day, and marked successful again on the twelfth day? if so, have they found none of them *then* rubbed? If they have, those so rubbed, were then doubtful; and those that they had only seen on the eighth day, though natural then, could not be vouched as successful.

These are grave questions for the Poor-law Commissioners of Ireland to ponder on. We fear, the more they are revolved in the minds of those outside the Commissioners' Board, the less faith will be placed in the return of 140,411 vaccinations in the country for 1859. That their returns are unreliable, so far as one locality, at least, is concerned, has been already incontrovertibly proved.

It is humiliating to see a member of our profession found guilty of gross dishonesty; and yet the instance recently exhibited in Athlone Union is, we fear, not the only one that could be found in Ireland, were a searching investigation instituted. Here we have, in truth, an example of both the working of this Act, and the method in which the vaccination of the people is, it is to be feared, to a very great extent conducted.

For certain reasons, an inquiry was held by one of the Poor-law Medical Inspectors, at the direction of the Commissioners, regarding the accuracy of the vaccine returns of the surgeon in charge of the Brideswell dispensary district. We shall quote the following passage from the Commissioners' letter to the Board of Guardians of the Athlone Union, containing their comments upon the evidence given during the investigation, as reported by Dr. Hill, the medical inspector; and removing Dr. O'Connell from his situation:—"It appears clearly from this report, that of 286 cases presented by Dr. O'Connell in his vaccination report, as having been successfully vaccinated by him in the first four months of the year 1860, no less than 64 were found by Dr. Hill, upon personal inquiry, and upon the testimony of trustworthy witnesses, to have been falsely entered in the vaccination report; and there is no doubt that these false entries were made by Dr. O'Connell for the purpose of increasing the amount of the sum payable to him by the board of guardians, at the rate of one shilling for each successful case of vaccination. It further appeared, on examination and comparison of Dr. O'Connell's vaccination reports for the year 1859, and the vaccination register for that year, that although he had, on the strength of his reports, received payment from the board of guardians for 800 cases, the whole number entered

on the register was only 579. These facts having been established by extraneous evidence, Dr. O'Connell's own statements on the subject were submitted, and are to the following effect—viz., 'That as to the difference between the number in his reports and the number entered on the register for 1859, he could only account for it by a number of sheets having been removed from the register, which had not been always in his possession; and he had no other mode of accounting for the difference. That although it is set forth in the register that all the persons vaccinated in 1859 were observed by him on the eighth day after vaccination, such statement was not correct, as it is difficult to get the people to bring back their children for the purpose, particularly if the vaccination succeeds. That he certified the success of the operation without having examined the persons vaccinated on the eighth day, as required by the Commissioners' regulation, of which he was aware; and that he did so from his experience of the fact that when the operation was successful, the parents are unwilling to bring back the children, lest the lymph should be taken from their arms. That the majority of those vaccinated did not return; and that he had no certainty as to the success of the operation in these cases as to the number returned as successfully vaccinated since the 1st of January last—viz., 286.' That number, Dr. O'Connell admits, is not a true statement. He entered in the list, he says, the names of persons whom he had not vaccinated this year, and the names of persons who are not residents in the townlands stated. 'I believe,' he says, 'there are the names of persons on that list who are not in existence at all. I think there are about one-third of the entries false.'"

So far as this case is concerned, there can be no doubt but that the Act, of which the Commissioners have now about a year's experience, is hostile to the progress of vaccination, and injurious, as holding out a temptation to peculation.

We have often been amused at the recollection of the story of the medical gentleman who, to swell his vaccination list—under this Act—vaccinated *one* "Murphy" on both arms, but took credit for *two* "Murphies" in his register; calling the right arm Paddy, and the left Jemmy. This tale we once considered a mere *jeu d'esprit*—a good joke, without foundation; but after the above revelation, we are warranted in believing that it was not overdrawn.

We are ourselves cognizant of a system of vaccination adopted in a certain region of our green island, which it may be well to notice. Here the surgeon's *wife* does the home work,

while the surgeon and *the gamekeeper* of the lord of the soil take the out-duty, and the surgeon's daughter keeps the registry. As to whether any are again seen or not after the operation, that is a matter of secondary consideration. One thing only is certain, and that is—that they have been "cut."

That this unreliable system of vaccination exists, as a general rule, throughout the country, we could adduce many witnesses to prove; one only we shall now introduce, inasmuch as, while he fully bears out our assertion relative to the working of the Act, he appears in bright contrast to the melancholy example of turpitude before noticed. In a communication to the "Medical Press" of October the 10th last past, alluding to this unfortunate *exposé* at Athlone Union, he says:—

"The account of the humiliating conduct of the medical officer of the Brideswell Dispensary, Athlone Union, as published in a late number of the 'Medical Press,' relative to vaccination, confirms me in the opinion I have always held of the inefficiency of the present law on that subject, and of the regulations which the Poor Law Commissioners have made for carrying the law into effect. I have at different times stated to the Medical Inspector of this district (a gentleman I have always found very courteous and friendly) my conviction that the present Vaccination Act would turn out to be a complete failure, inasmuch as it was founded on wrong principles. Making the amount of remuneration to the medical officer depend on the number of *successful* cases of vaccination, holds out a *bonus* to unprincipled persons to make false returns (and unfortunately the medical profession is not without its black sheep), and I greatly fear such returns are not confined to the Brideswell Dispensary. I cannot believe it possible that the great number of successful cases I see stated in different returns can be correct, unless there be a very great difference in the mode of attendance from what it is in this locality—I mean with respect to the proportion of children brought back for examination on the eighth day. *In my district scarcely one-half of those vaccinated are brought back for examination;* AND OF THOSE THAT ARE BROUGHT BACK, ALL ARE NOT SUCCESSFUL CASES —AT LEAST ONE-SIXTH ARE EITHER SPURIOUS OR FAILURES. *It is very probable that many of the cases not again seen have been successful, but the surgeon cannot vouch that they have been so.*

"There is no reason *à priori* why the surgeon, if he be paid by the number of cases of vaccination, should not be paid equally for every case, as he has much the same trouble in the unsuccessful, or those not again seen, as in the successful. The operation and entry in the vaccination registry give equal

trouble in each; also the examination of those that return, and entry of the result in the registry, is equally troublesome in each; the only difference is the vaccination on the second arm, which, I think, ought to be performed in all unsuccessful and doubtful cases on the eighth day. But it is very derogatory to men of a respectable profession to be paid in such a manner for their professional services; and from the commencement I have declined any payment for vaccination either at the dispensary or out-station. *I told the dispensary committee and the board of guardians that I would perform all the required duties with respect to vaccination, but that I would act gratuitously while the law continued in its present state; and I have always given to the Poor-law Commissioners, Board of Guardians, &c., correct returns of the numbers vaccinated, with the result, as far as I was aware of it, whether successful, doubtful, unsuccessful, or not again seen.* I know that the medical officers of some other dispensaries adjoining mine have acted similarly. *If all the medical officers of dispensaries would act in the same manner, I think there is little doubt but that a law more efficient and less offensive than the present one, would be passed.*"

The question may now be fairly asked, of the 140,411 cases of vaccinations, so exultingly produced by the Poor-Law Commissioners as a brilliant example of the Shilling Remuneration Act, how many may be relied upon as secured against small-pox?

On a rough calculation—but, from many sources, we are certain our estimate shall be found but a too favourable one—we may take one-half as never having been seen, and one-sixth of the half seen as either spurious or doubtful; thus, there would then be about 58,500 reliable cases, and about 81,900 of the 140,411 going about the country in an unprotected state. What follows? Many of these 81,900 must contract small-pox; but as they have the name of having been vaccinated, the people are led to the conclusion that there is no protective power in cow-pox, seeing that so many of their neighbours who, in their estimation, have been vaccinated, take the small-pox. Why blame the working classes, when they then conclude that they would rather undergo inoculation with the natural pock? To what other conclusion could THEY be expected to arrive? Many disreputable persons shall be found ready to strengthen this opinion so naturally formed; the variolous inoculator shall have a fair field to labour in, and small-pox shall again revel in its pristine frequency and intensity.

It is absurd to assert that all those who are not presented

for inspection on the eighth day may be considered as successful cases; and this, by the way, is the "flattering unction" laid "to the soul" by those who falsely return such cases as successful. How can it be possible for even the best educated and most intelligent peasant to form a correct opinion on a subject, upon which, so many of the profession are incompetent to judge.

Such, then, being the system of vaccination in Ireland under the administration of the Act, 21 & 22 Vic., c. 64, according to the directions of the Poor-law Commissioners,—no other conclusion can be arrived at, than that the said Act is worse than a failure. It must tend to destroy all faith in the protective influence of cow-pox, by sending abroad thousands of persons whom the public *assume to be vaccinated* (having gone through the form), yet who really never have been vaccinated, and are necessarily fit recipients for variolous poison. This system, moreover, holds out an inducement to the unprincipled to swindle the public, and is thus pernicious, not only as an injury to the cause of vaccination, but as tending to demoralize a portion of the profession, rendered, alas! easy victims to temptation from straightened circumstances. We may then say, as regards vaccination in this country, that we are worse off than if we had no Act—and the question follows,—What do we require?

First, an extension of the registration of births, marriages, and deaths' Act to Ireland; followed by, second, a compulsory Vaccination Act, as in England; but free from its errors, proper provision being made for carrying out its penalties.

Above all, it would be well that the vaccination of the country should be taken from out of the control of the Poor-law Commissioners. The vaccination of the people should be free from eleemosynary contamination. Government should take the matter altogether under her own control. Provincial inspectors should be appointed; vaccinators, who really know how to conduct vaccinations, should have the charge of the various districts throughout Ireland; and a responsible board should supervise. Payments to all engaged in the vaccination of the country should be liberal in a stated yearly sum, *not a beggarly pittance, doled out according to the numbers vaccinated.* The salaries to the vaccinators, &c., should be paid out of the Treasury, and "rate-payers" and "poor-law guardians" should have no voice in the matter. To protect the people from variola, *as they ought to be protected*, must cost a considerable sum; but no expense should be considered too great for the preservation of life and health.

As to the maintenance of the stock of lymph, it should be made compulsory, when deemed by the physician or surgeon indispensable, for the people to afford infection for the benefit of others. Then, with the aid of a central vaccine institution in the metropolis, and the universal adoption of Dr. Husband's method of preserving lymph by means of capillary tubes—a most useful and beautiful invention, to which we alluded on a former occasion—very little trouble would be experienced in maintaining a full supply. When the vaccination of the country has been conducted in perfection, it will then be time to form an opinion as to the necessity of renewing the lymph. Until an universal and perfect system has been adopted, no true opinion can be formed. We would venture to predict, however, that, with a well-arranged and properly-superintended system, it will be found that the virus, as it at present exists, is perfectly protective, and that it has lost none of its pristine virtues.

Della Odierna diminuzione della Podagra e delle sue Cause Saggio di Patologia Storica. Del Dr. ALFONSO CORRADI, Professor di Patologia nella R. Universita di Modena.

On the Diminution of Gout in the present Age: a Memoir of Pathological History. By Dr. A. CORRADI, Professor of Pathology in the R. University of Modena. Bologna: Gamberini. 1860. 4to, pp. 58.

THE title of this pamphlet at first considerably surprised us, as we had not at all remarked that during late years gout had assumed a retrograde course, or had, indeed, become less virulent in its attacks; but we had not proceeded very far, when we discovered that the talented Professor of the University of Modena was drawing comparisons between *ancient* and *present* times, and not between less distant periods of more modern days.

The best way we can convey to our readers a correct idea of this interesting pamphlet will be by giving ample extracts from it, which we shall endeavour to do in as nearly the author's words as the difference of idiom will permit.

Taking it for granted that gout is now a much less common disease than it was at the commencement of the Christian era, and during the dark ages of the Lower Empire, the author commences by saying, in the first page of his memoir:—"Ancient diseases pass away, while new ones take their place; mild ones become severe, while deadly forms of illness assume a milder character; sporadic diseases become diffused; epidemics

become circumscribed; and that because either in man himself, or in his outward conditions and relations, such changes take place, or such new combinations, that the older pathological states either change in character or disappear altogether."

Nothing truer. Disease not only changes its character, but sometimes disappears altogether. Where is now the plague which in the middle of the fourteenth and seventeenth centuries desolated the fairest portion of Europe? What has become of that syphilis which, in 1496, decimated the armies of Charles VIII. at Naples? We cannot recognize it in that disease which still continues to be a source of so much suffering in the present day. What has become of that dire sweating sickness which desolated Great Britain in 1485? They have passed away, and new types of disease have taken their place. Even in our own days we have seen a perfect change come over the nature of disease. Where are now the fevers that used to be cured by bleeding and low diet? And even pneumonia, which, a few years ago, was the most sthenic of sthenic affections, is now so altered in its character, that rarely, if ever, even in the largest practice, does one meet with cases requiring depletion?

At page 6, the author quotes largely from the "Tragopodagra"—a celebrated comic poem, written by one Lucian, about the year 120 of our era, who seems, from his vivid description of the disease, to have been himself a victim of gout.

"Neither did the Jews escape this affliction," says the author; "and Alexandria, Athens, and Rome, the three greatest and wealthiest cities of the world, suffered beyond description from its visitation. Ptolemy Philadelphos was a martyr to gout; and Celius Aurelianus says that gout was endemic in the capital of Egypt, which must surely have been the case, if even the labourers suffered from it, as would appear to have been the case, from a letter of the Emperor Hadrian to the Consul Servianus. In Rome it was a common disorder, and most of the principal citizens suffered from it. Sylla, Augustus, and Claudius, were martyrs to it; Galba was so crippled by it, that he could not put on his calzarii, nor open a scroll, nor hold anything in his hand; and Seneca, fully aware that he could not be cured, was happy if able by any means to alleviate the severity of its attacks. There have been some who, rather than suffer the agonies of this disease, have preferred to lose their feet,[a] and some even their lives.[b] No wonder, then, if, in trying

[a] C. Plinii, Hist. Nat. Lib. xxv. Edit. Aug. Taur.
[b] Philostratus' Lives of the Sophists, Lib. i. (Polemonius).

to subdue so painful and obstinate a complaint, the physicians of those times invented the most extraordinary mixtures, and the patients resigned themselves to swallowing the most disgusting remedies."

"Hippocrates," who flourished about 400 years before Christ, "had asserted, in his aphorisms, that eunuchs, women who still menstruated, and youths who had not yet sacrificed to Venus, did not suffer from gout;" but Seneca, about 500 years later, "complains that in his time even the women lost the hair off their heads, and suffered from pains in their feet;" and Galen, about the middle of the second century, "asserts that the eunuchs suffered from it as well as the rest of mankind."

"About this time Diocletian passed the law, which exempted from office and personal service those who were severely afflicted with gout. At Constantinople, during the Lower Empire, gout was extremely prevalent, and the Emperor Heraclius, Michael Parapinaceus, Constantinus Monomachus, Alexis Angelos, suffered severely from it. The celebrated Anna Comnena praises, in the life of her father, the Emperor Alexis, the tender care of her mother, in endeavouring by gentle frictions to assuage his agonies. It was about this period that the disease obtained a new name, and the barbarous epithet of *gout* was added to the more ancient name of podagria,—which new name some derive from the German gicht, gichten, which means, agonizing pain. The rapid cure of so formidable a disease was looked upon as beyond the powers of ordinary physicians," and special saints were invoked by the Christians for its relief. "St. Augustin, in his work, 'De Civitate Dei,' tells us that, in his time, those sufferers who prayed to St. Stephen, Martyr, were always cured. We also learn from the 'Acta Sanctorum,' that many recovered their health after praying at the tomb of St. Thomas Aquinas. We are told, also, in the same Acta, that St. Mark, Bishop of Treveri, who was greatly venerated as a curer of gout, used to be invoked by the following hymn:—

> 'Nam spasmo, arthritica, chiragra
> Contractis quibusvis, et podagra
> Mire opitularis,'—(Acta Sanctorum, Die xvi. Januari.)

"Pope Honorius IV., in 1285, summoned to Rome Thaddeus of Florence, a celebrated physician, who required and obtained one hundred ducats a day[a] for his services. Vladislaus IV.,

[a] An enormous sum, considering the great difference between the value of gold now and then.

King of Poland, gave six thousand pieces of gold to a peasant for a supposed specific against the gout. Pontanus said: 'Hæc (Podagra) conflicti sunt Philosophi et Principes et Reges et Imperatores;' and Sydenham comforted himself and his companions in misfortune by asserting that 'Divites plures interemit quam pauperes, plures sapientes quam fatuos.'

"Gout, which, as we have endeavoured to show, was so common in ancient times, has now become generally so rare that we may look on it as almost extinct. Even in England, its most favoured locality—the country of Sydenham, who suffered so acutely from it, and wrote so ably about it—it has considerably diminished; and the celebrated Owen, when questioned upon this subject, has confirmed our opinion, and promised documentary evidence, which, I trust, will soon reach me. In Holland, also, and in Belgium, where in Boerhaave's time gout was most common and frequent, it has now become rare. Professor Serrano, Secretary to the Academy of Medicine in Madrid, also assures me that gout is much less frequent in Spain than it was during the past century. The same I hear from Genoa, Milan, Tuscany, and the Marches. I should have wished to strengthen my assertion by figures and statistics; but the difficulty, or rather the impossibility, of getting such, compels me to rely on the information received from friends and colleagues, whose truthfulness I have no reason to doubt. From England alone, where every fact is noted, taken into account, and rigidly investigated, could I have obtained the necessary information; and I am anxiously looking forward to some statistical tables of Dr. Farr, which I hope to add as an appendix to this memoir."

We thank Dr. Corradi for his good opinion of British statistics; and, no doubt, most deservedly do they hold a high position on the Continent. He adds, further, that, on consulting the obituary tables of England, France, Germany, and Italy, he rarely finds deaths from gout recorded. Canstatt's Jahresbericht scarcely mentions gout; and Hirsch, in his late work, Handbuch der Historisch-Geographischen Pathologie, asserts beyond all doubt that gout has greatly diminished. The author does not deny that, probably, many arthritic disorders were recorded as gout by ancient authors; but he adds: "Lucian's description of this disease so exactly tallies with the masterly account given of it by Sydenham, that it is impossible not to recognise them as one and the same complaint."

Professor Corradi is of opinion that the diminished intemperance of the present age is the principal cause of the dimi-

nution of gout. "We have no idea," says he, "of the gross excesses of the ancients both in eating and drinking. 'Vomunt ut edant, edant ut vomunt,' said Seneca. This disgusting habit was so common in his days, that it was almost considered a want of courtesy, if a guest did not void his stomach before commencing a repast. Cæsar vomited before reclining at the table of Cicero; and that celebrated orator, describing Anthony, says: 'Tu istis faucibus, istis lateribus, ista gladiatoria totius corpori firmitate, tantum vini in Hippiæ nuptiis exhauseras ut tibi necesse esset in populi Romani conspectu vomere postridie?'[a]

"Drunkenness was so common in the time of Charlemagne, that he passed laws which condemned to the *rod* those priests who should be convicted of it, and compelled the judges to attend the Courts fasting; 'rectum autem et honestum videtur ut judices jejuni causas audiant et discernant'[b].

"Charles V., though tired of being emperor, was not tired of good living; and, though a martyr to gout, when in the retirement of the monastery of St. Justus, would not pay any attention to the exhortations of his friends and attendants, who often used to remind him of the old Spanish proverb: 'La Gota se cura tapando la boca'[c]; and he had so decided an aversion to fasting, that he obtained a dispensation from Pope Julius III. to abstain from it, even when he was going to take the Communion."

Without saying too much for our present habits, I think we must all agree that such excessive intemperance has been long unknown; and even within the last sixty years, a good step has been taken in the right direction. Professor Corradi thinks, also, that in the middle ages, in consequence of the unreclaimed state of the land throughout Europe, people were compelled to feed much more on animal than vegetable food. The forests abounded in wild animals, whereas agriculture was scarcely attended to; and thus, animal food being much the most abundant, it was much more freely used. Vegetables were scarce in Great Britain, even in Elizabeth's reign; and Hume tells us that, in those days, a salad had to be imported from Holland. But, as agriculture increased, so the forests disappeared, and the supply of animal food diminished; and this has gone on progressively, till it has reached such a point in some Continental countries, that animals which we would consider as carrion

[a] Philipp. II. § 25. Edit. Aug. Taurin.
[b] Capitul Car. Magni et Ludovoci Pii, lib. i. 60.
[c] The gout is cured by stopping up the mouth.

have been recommended as substitutes for butchers' meat[a]. In France, especially, has the want of animal food been so much felt, that it has been seriously proposed to manufacture a *species* of *meat* in the following way:—Cattle were to be kept in good pastures, and *bled* every week, or every fortnight, or as often as they could bear it, and to as great an extent as would be consistent with their safety, and the coagulated blood sold at a cheap rate as a substitute for meat!!!

The author is, then, of opinion that the present diminution of gout is due to the change in the habits of the nations of Europe. "In Constantinople, gout is unknown at present, though so common during the Lower Empire; but Mahometan sobriety has succeeded to the drunkenness of the Greek Empire: while in England, where much more meat is consumed, and more wine is drank than elsewhere, gout still is prevalent, though even there it is much less frequent than of old."

[a] See Proceedings of Les Hippophages.

PART III.

MEDICAL MISCELLANY.

TRANSACTIONS OF THE BELFAST MEDICAL SOCIETY.

SESSION 1859–60.

JUNE 3, 1860.

DR. MURNEY, VICE-PRESIDENT, in the Chair.

DR. CORRY read the following *Case of Traumatic Tetanus successfully treated by Conium Maculatum.*

MARCH 26, 1860.—Was sent for to visit J. Russell, aged 55, manager of a spirit store, residing in Ballymacarrett. On my arrival I found him labouring under unmistakable symptoms of tetanus, which had set in two days previously; the paroxysms were frequent and severe, there was decided opisthotonos, with precordial pain, and the trismus was so great that he could only open his mouth to the extent of half-an-inch; there was, also, considerable difficulty in swallowing, and for the last twenty-four hours he had been unable to assume the recumbent position, from an agonizing sense of suffocation. Pulse, 115; skin, cool; bowels constipated. Upon inquiry, I ascertained that, about ten days ago, his left hand had been crushed between two casks, by which accident a severe lacerated wound had been produced; the injury, however, had, to all appearance, progressed favourably, and was now nearly healed.

Having previously had charge of two cases of this fearful malady, which I had treated unsuccessfully by the usual remedies, and having subsequently read M. L. Vella's communication to the Academy of Sciences, in Paris, on the employment of woorara in tetanus, and a paper by Mr. Spencer Wells on the same subject, I was anxious to give the poison a fair trial in the present instance, and accordingly endeavoured to obtain some for that purpose; however, not being able to procure any in Belfast, I took advantage of the suggestion thrown out by Dr. Radcliffe, "that conium, the physiological action of which is almost identical with woorara, might prove a more manageable and suitable remedy;" I, therefore, ordered my patient five grains of the extract every three hours, dissolved in water, having previously evacuated the bowels by an enema

of castor oil and turpentine. After the medicine had been administered for twenty-four hours, there was a decided improvement in the symptoms; he was now able to lie down, obtained a short sleep, and the spasms were less acute; the pulse, also, fell to 100. Forty-eight hours afterwards, the peculiar physiological effects of the conium began to manifest themselves; he complained of general debility, accompanied by numbness and loss of power in his lower extremities; the paroxysms occurred at long intervals, and were greatly diminished in severity; pulse 80. Ordered the medicine to be continued, with wine, beef-tea, and eggs, to support his strength. At the expiration of a week, complete paralysis of the lower extremities had been produced; the upper limbs were also much affected, and there was considerable difficulty in deglutition; the spasms and rigidity of the different muscles had now all but subsided; there was, however, still some trismus, and he slept but little; I had, therefore, to order him, in addition to the conium, an occasional night-draught of the solution of the muriate of morphia. By the end of a fortnight it was considered necessary to diminish the dose, and give it less frequently, as the muscles of respiration were becoming affected, the paroxysms had entirely ceased, and slight trismus alone remained. I now carefully watched the action of the medicine, and on the 21st day from its first administration was enabled to discontinue its use, as every symptom of tetanus had disappeared. A stimulating liniment was now applied to the limbs, with quinia internally, and in another fortnight he was able to return to business.

Remarks.—Notwithstanding the attention which has of late been directed to pathological investigations, our knowledge of the true nature of tetanus is, as yet, far from satisfactory; the disease consists of a peculiar excitement of the medulla oblongata and true spinal system, occasioning severe continued spasms of the voluntary muscles, followed by imperfect relaxations. Our line of treatment should, therefore, consist in removing local irritation, and allaying nervous excitement. So far back as 1811, Sir Benjamin Brodie demonstrated by experiments the powerful sedative effects of woorara in controlling muscular spasm; and in 1836, Mr. Curling stated, in his treatise on the subject, that the poison was deserving of a cautious trial in acute cases of tetanus in the human subject. However, the great drawback to its use is the impossibility of procuring it of uniform strength, and the consequent difficulty of regulating its action. In conium, we have a much more manageable agent, possessing all the sedative powers of woorara, without its disadvantages. During the treatment of the foregoing case, I watched its action carefully, and found, that by either increasing or reducing the dose, its effects could be proportionally augmented or diminished. It would, of course, be unfair to form a decided opinion of the curative powers of any remedy from the result of a single trial; but I must say, that, from the first, I found it so manageable and beneficial in its action, that I would have every confidence in again using it under similar circumstances.

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